

NCEH/ATSDR News Clips for Monday, August 10, 2015

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Summary

1. Veterans Journal: VA may widen coverage tied to contaminated water at Camp Lejeune ATSDR CDC Named

Providence Journal -- 8/10/2015 Providence, RI

The Department of Veterans Affairs says it will begin amending its regulations to possibly cover more conditions affecting veterans exposed to contaminated drinking water at the Marine Corps base in N.C. between 1953 and 1987.

2. Gov. Andrew Cuomo calls in CDC for joint effort to battle Legionnaires' outbreak NCEH CDC Named

Examiner, The -- 8/8/2015 Washington D.C.

Gov. Andrew Cuomo has dispatched state and federal health care personnel to the South Bronx. They will assist with the deadly outbreak of Legionnaires' disease that has left 10 people dead over the past month. Over 100 other people have fallen ill due to the outbreak.

3. Navajos plan to sue EPA over river cleanup **Albuquerque Journal -- 8/10/2015 NM**

The president of the Navajo Nation said Sunday that he intends to sue for "every dollar it spends cleaning up this mess" after Environmental Protection Agency employees accidentally released at least 3 million gallons of wastewater, including potentially harmful metals, into a river that breached the sovereign nation's borders this weekend.

4. Mysterious Fungus Killing Snakes in at Least 9 States

ABC News -- 8/9/2015 New York City, NY

Biologists have compared its appearance to the fungus that causes white nose syndrome in bats, which since 2006 has killed millions of the creatures and continues to spread across North America.

**5. How a Secretive U.S. Agency Discovered the A-Bomb's Effect on People
Politico -- 8/9/2015 Arlington, VA**

...President Harry Truman had signed an order to establish the Atomic Bomb Casualty Commission (ABCC), charged with studying atomic bomb survivors to determine how radiation exposure affected their health.

**6. Thousands of mines with toxic water lie under the West
Deseret News -- 8/9/2015 Salt Lake City, UT**

Beneath the western United States lie thousands of old mining tunnels filled with the same toxic stew that spilled into a Colorado river last week, turning it into a nauseating yellow concoction and stoking alarm about contamination of drinking water.

**7. Plume from EPA mine spill likely headed for Lake Powell; visitors to be warned starting Monday
Deseret News -- 8/9/2015 Salt Lake City, UT**

"This is a long-term impact. The sediment, the metals that are in that sediment are going to settle out to the stream bottom," he said. "As we have storm surges, as we have flooding events, that sediment can and likely will get kicked back up into the water. We're going to have to do ongoing monitoring."

**8. Animas River mine spill: La Plata and Durango declare state of emergency
Denver Post, The -- 8/10/2015 Denver, CO**

Three million gallons of water containing mining waste has poured into the Animas River since Wednesday, and it is still unclear what the environmental and health impact of the spill, caused by the Environmental Protection Agency, will be.

**9. EPA orders more air quality tests for homes near Superfund sites
Los Angeles Times -- 8/10/2015 Los Angeles, CA**

The EPA sampled 107 homes near the Del Amo and Montrose Superfund sites earlier this year

under pressure from residents worried they are breathing dangerous chemicals seeping in their homes from a plume of tainted groundwater below.

**10. How to Protect Yourself From Junk Food Science A guide for reasonable consumers
Bloomberg -- 8/10/2015 New York City, NY**

Some people will believe what they want to regardless of what the evidence says. Others want to make good choices about what they eat, but the information needed to make those decisions is a cacophony of often conflicting claims from marketers, academics, activists, and the media.

**11. 'They're not going to get away with this': Anger mounts at EPA over mining spill
FOX News Network -- 8/10/2015 New York, NY**

Anger was mounting Monday at the federal Environmental Protection Agency over the massive spill of millions of gallons of toxic sludge from a Colorado gold mine that has already fouled three major waterways and may be three times bigger than originally reported.

**12. Work, pedal, and be happy
ScienceDaily -- 8/10/2015 Rockville, MD**

study also found that workers who pedaled more were more likely to report weight loss, improved concentration while at work, and fewer sick days than co-workers who pedaled less. ...16-week pilot study was the third and longest in a series of studies he has conducted testing portable pedal machines among workers with sedentary jobs. His interest stems from growing evidence that people who sit all day -- even if they're active outside of work -- are at increased risk for serious health conditions such as multiple chronic diseases, poorer cognitive function, and mental distress.

**13. Re-thinking 'adaptive radiation,' one of biology's most important concepts
ScienceDaily -- 8/10/2015 Rockville, MD**

'Adaptive radiation' is recognised as a pillar of evolutionary science. It describes the development of new biodiversity, and is triggered when a species encounters a new environment with plenty of available resources -- this is called 'ecological opportunity'.

**14. Former Justice Stevens calls mercury ruling 'mind-boggling'
E&E Publishing, LLC -- 8/7/2015 Washington, D.C.**

...said the high court's decision this year to invalidate U.S. EPA's air standards for mercury and other toxics was "truly mind-boggling."

15. China 'exporting' ozone pollution to US, study says
Agence France-Presse (AFP) -- 8/10/2015 Paris, FR

Progress slashing unhealthy ozone in the western United States has been largely undone by pollution wafting across the Pacific from China, according to a study published Monday. ...Scientists have long suspected this might explain why ozone levels along the US west coast remained constant despite a significant local reduction in ozone-forming chemicals.

16. Portable ultra-broadband lasers could be key to next-generation sensors
PhysOrg.com -- 8/10/2015 Internet

chemicals sometimes reveal their secrets when probed with mid-infrared wavelength lasers. Nearly all chemicals, including explosives, industrial, and pollutants, strongly absorb light in the mid-infrared wavelength region, which is often called the "fingerprint region" for chemicals.

17. Potentially toxic chemicals flood Animas River
KOAT News -- 8/10/2015 ALBUQUERQUE, N.M.

3 million gallons of contaminated water turn river orange

18. Coca-Cola Funds Scientists Who Shift Blame for Obesity Away From Bad Diets
New York Times -- 8/9/2015 New York, NY

Coca-Cola, the world's largest producer of sugary beverages, is backing a new "science-based" solution to the obesity crisis: To maintain a healthy weight, get more exercise and worry less about cutting calories.

19. Secret sanctions revealed against university hosting \$1.25 billion biolab CDC Named
USA TODAY -- 8/4/2015 McLean, VA

Kansas State University — where a controversial \$1.25 billion biosecurity lab facility is under construction — secretly faced federal sanctions last year after repeatedly violating safety regulations during its research with bioterror pathogens, records obtained by USA TODAY show.

20. The Big Reason Why America Is Turning to Renewable Energy
Nation, The -- 8/10/2015 New York, NY

Employment in renewables is skyrocketing, while fossil fuels have become an economic liability.

21. The True Value of BP's \$18.7 Billion Settlement
AlterNet -- 8/7/2015 San Francisco, CA

What does the record settlement really mean to one of the world's wealthiest companies — and the Gulf Coast it is meant to restore?

22. Watch the wind swirl across Earth with this awesome map
Grist Magazine -- 8/7/2015 Seattle, WA

Though software engineer Cameron Beccario did it first with “Earth,” now NOAA has launched its own real-time wind model displayed over the gorgeous backdrop of the world at night.

23. Japan split over restart of first nuclear reactor since Fukushima disaster
Guardian -- 8/9/2015 London, UK

Rising costs from gas and oil are cited by supporters of a programme to bring reactors back on line, but ageing plant and risks raise widespread concern

24. What you need to know about toxic algae blooms
USA TODAY -- 8/7/2015 McLean, VA

A massive toxic algal bloom thriving in the warm water along the West Coast may be the largest ever recorded, according to National Oceanic and Atmospheric Administration scientists.

[Top](#)

1. Veterans Journal: VA may widen coverage tied to contaminated water at Camp Lejeune
ATSDR CDC Named
Providence Journal -- 8/10/2015 Providence, RI

Veterans Journal: VA may widen coverage tied to contaminated water at Camp Lejeune
ATSDR CDC Named

The Department of Veterans Affairs says it will begin amending its regulations to possibly cover more conditions affecting veterans exposed to contaminated drinking water at the Marine Corps base in N.C. between 1953 and 1987.

George W. Reilly Aug. 10

The Department of Veterans Affairs has announced that it will begin amending its regulations to cover more conditions affecting veterans exposed to contaminated drinking water at U.S. Marine Corps Base Camp Lejeune in North Carolina between Aug. 1, 1953, and Dec. 31, 1987.

This process is in addition to the health care the VA already provides for 15 conditions to eligible veterans and their family members who were stationed at Camp Lejeune for at least 30 days between the above dates.

According to Wikipedia, the Camp Lejeune water contamination occurred from 1953 to 1987 when Marines and their families living at the base bathed in and drank tap water that was contaminated with harmful chemicals. An undetermined number of former base residents later developed cancer or other ailments, which many blame on the contaminated drinking water. Victims claim that Marine Corps leaders concealed the problem and did not act properly in trying to resolve it or notify former base residents that their health might be at risk.

In 2009, the federal government began investigating allegations of contaminated water and failures by Marine officials to act on the issue. In February 2014, the Centers for Disease Control and Prevention found that the contaminated water at Lejeune significantly increased the risk of multiple cancers, including in the liver and kidney, and amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease. ALS is a progressive neurodegenerative disease that causes muscle weakness, paralysis, and ultimately, respiratory failure.

In August 2012, President Obama signed the Janey Ensminger Act into law to begin providing medical care for people who may have been affected by the contamination.

Possible sources of the contamination included solvents from a nearby, off-base dry cleaning company, on-base units using chemicals to clean military equipment and leaks from underground fuel storage tanks.

The diseases that are currently being reviewed by the VA for potential presumptive service connection include kidney cancer, angiosarcoma of the liver and acute myelogenous leukemia, which are known to be related to long-term exposure to the chemicals that were in the water at Lejeune from the 1950s through 1987. The chemicals are benzene, vinyl chloride, trichloroethylene and perchloroethylene, which are known as volatile organic compounds used in industrial solvents and fuel components.

Discussions on establishing these presumptions will begin Aug. 19 between the VA and the Agency for Toxic Substances and Disease Registry. The National Academy of Sciences may also be asked to evaluate the body of scientific knowledge and research related to exposure to these chemicals and the subsequent development of other diseases. VA will consider all public comments received when determining the final scope of any presumptions.

Veterans with health problems they believe are related to exposure to the water at Camp Lejeune may file a claim for disability compensation online at ebenefits.va.gov, or call (800) 827-1000 for assistance. For further information on what happened with the water contamination at Camp Lejeune, visit the VHA Office of Public Health's website at 1.usa.gov/1gMU3DJ.

[back](#) / [top](#)

2. Gov. Andrew Cuomo calls in CDC for joint effort to battle Legionnaires' outbreak NCEH CDC Named

Examiner, The -- 8/8/2015 Washington D.C.

Gov. Andrew Cuomo calls in CDC for joint effort to battle Legionnaires' outbreak NCEH CDC
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August 8

Gov. Andrew Cuomo has dispatched state and federal health care personnel to the South Bronx. They will assist with the deadly outbreak of Legionnaires' disease that has left 10 people dead over the past month. Over 100 other people have fallen ill due to the outbreak.

Via an Aug. 7 briefing lead by New York State Health Commissioner Dr. Howard Zucker, Gov. Andrew Cuomo announced that state and federal agencies are now involved in the critical health care emergency happening in the South Bronx. Cuomo sees the continued health risks to South Bronx residents as the stuff of science fiction.

At the press conference it was announced that Dr. Claressa Lucas of the National Center for Immunization and Respiratory Diseases, and Dr. Jasen Kunz of the National Center for Environmental Health will lead the team being sent from the Centers for Disease Control to assist in the anti-Legionnaires' effort. New York State Health Commissioner Dr. Howard Zucker had this to say at yesterday's press conference, "This is an all-hands-on-deck situation, and we need all of our partners at every level of government to help address the situation."

Legionnaires' is a flu-like disease which is not communicable, but Dr. Zucker has clearly stated that anyone in New York State who is experiencing flu-like symptoms should seek treatment immediately. The contagion is most deadly for the elderly and persons with pre-existing respiratory conditions such as asthma.

A week ago New York Mayor Bill de Blasio stated that there was no need for alarm, but Gov. Cuomo believes the situation has hit critical mass. A phone conversation that involved Dr. Zucker, Bronx Borough President Ruben Diaz, Jr. and Gov. Cuomo indicated differently. A subsequent conversation between Cuomo and CDC Director Dr. Thomas Frieden moved along the decision to involve the federal agency.

[back](#) / [top](#)

3. Navajos plan to sue EPA over river cleanup Albuquerque Journal -- 8/10/2015 NM

Navajos plan to sue EPA over river cleanup

Patrick Lohmann / Journal Staff Writer August 10

The president of the Navajo Nation said Sunday that he intends to sue for “every dollar it spends cleaning up this mess” after Environmental Protection Agency employees accidentally released at least 3 million gallons of wastewater, including potentially harmful metals, into a river that breached the sovereign nation’s borders this weekend.

The orange plume of wastewater, which slowly crawled down the San Juan River after gushing out of a Colorado mine on Friday, has already forced many reservation residents in New Mexico and Utah to cease watering their crops and livestock, shut down at least two drinking water wells and required them to avoid the river entirely, said Rick Abasta, communications director for Navajo tribal leadership.

The nation on Sunday also took steps to formally declare a state of emergency for the reservation, warning of potential environmental and other damage. The declaration was waiting for the president’s signature as of Sunday evening.

“The EPA was right in the middle of the disaster and we intend to make sure the Navajo Nation recovers every dollar it spends cleaning up this mess and every dollar it loses as a result of injuries to our precious Navajo natural resources,” president Russell Begaye said in a news release. “I have instructed Navajo Nation Department of Justice to take immediate action against the EPA to the fullest extent of the law to protect Navajo families and resources,” he added.

New Mexico officials said the plume was beginning to dissipate, and preliminary data released by the EPA on Sunday showed that the levels of metal at various checkpoints along the Animas river in Colorado, including arsenic and lead, diminished within several hours.

However, state environment department officials said Sunday that they still need much more information and were only beginning to examine the data.

Also, federal and state officials said Sunday that a major potential problem could be the potentially hazardous sediment that sinks to the bottom of the river as the plume passes and that could be kicked up again in flooding or weather events.

An Environmental Protection Agency official said Sunday she doesn’t believe wildlife will suffer significant health impacts from the large volume of wastewater that spilled from an abandoned mine in southwestern Colorado.

The EPA also said Sunday that the amount of wastewater that spilled from Colorado’s Gold King Mine into the Animas River is three times larger than its initial estimate. The agency says 3 million gallons spilled into the river Wednesday and Thursday, instead of 1 million. The revision came after the EPA used a stream gauge from the U.S. Geological Survey.

EPA toxicologist Deborah McKean says the sludge laced with heavy metals moved so quickly after the spill that it would not have harmed animals that consumed it.

The EPA still doesn't know if there are any health risks posed to people or aquatic life.

Trais Kliphuis, water protection division director for the State Environment Department, said New Mexico officials have been concerned with what they said was a slow rollout of information and unclear leadership in charge of coordinating the response.

She said the department will have employees outside the San Juan County fair providing information about the plume and has created a list of all the wells within 1.5 miles on either side of the river. Employees will also go door to door, environment officials said, to offer to sample wells in or around the river's floodplain.

The wastewater spilled from the Gold King Mine on Friday when an EPA-supervised cleanup crew accidentally breached a debris dam that had formed inside the mine. The mine had been inactive since 1923. The EPA's stated intention was to assess the on-going wastewater releases from the mine, to treat the water and to consider the feasibility of continued treatment for the Gold King Mine and others nearby that contain similar reservoirs of wastewater.

Kliphuis said the state environment department was aware that some of the wastewater was trickling out of the mines in Colorado but that a deluge of this sort was impossible to predict.

"We were aware that there was a trickling, that there was some interesting hydrogeology going on there," she said. "... But nobody could have predicted this. It was unprecedented."

The plume reached the northern New Mexico cities of Aztec on Friday night, Farmington on Saturday morning and Kirtland on Saturday afternoon. The plume has been visually diluted and the leading edge of it is far less defined.

No health hazard has been detected yet. In addition to lead and arsenic, federal officials say the spill contains cadmium, aluminum, copper and calcium, but the concentrations were not yet known.

Water samples were also tested in New Mexico, and results are expected to be found early this week. The Animas flows into the San Juan River in New Mexico, and the San Juan flows into Utah, where it joins the Colorado River in Lake Powell.

At least two of the heavy metals, lead and arsenic, found in the waste water can be lethal for humans with long-term exposure.

[back](#) / [top](#)

4. Mysterious Fungus Killing Snakes in at Least 9 States **ABC News -- 8/9/2015 New York City, NY**

Mysterious Fungus Killing Snakes in at Least 9 States
NEW HAVEN, Vt. Aug 9, WILSON RING Associated Press

Hidden on hillsides in a remote part of western Vermont, a small number of venomous timber rattlesnakes slither among the rocks, but their isolation can't protect them from a mysterious fungus spreading across the eastern half of the country that threatens to wipe them out.

In less than a decade, the fungus has been identified in at least nine Eastern states, and although it affects a number of species, it's especially threatening to rattlesnakes that live in small, isolated populations with little genetic diversity, such as those found in Vermont, New Hampshire, Massachusetts and New York.

In Illinois the malady threatens the eastern massasauga rattlesnake, which was a candidate for the federal endangered species list even before the fungus appeared.

Biologists have compared its appearance to the fungus that causes white nose syndrome in bats, which since 2006 has killed millions of the creatures and continues to spread across North America.

It's unclear, though, if snake fungal disease, "*ophidiomyces ophidiicola*" was brought to the United States from elsewhere, as was white nose fungus, or if it has always been present in the environment and for some unknown reason is now infecting snakes, biologists say.

"I think potentially this could overwhelm any conservation effort we could employ to try to protect this last remaining population," said Doug Blodgett, a biologist with the Vermont Department of Fish and Wildlife who has been studying the state's rattlesnake population for 15 years. "We don't have any control over it. It's just completely out there in the wild."

Rattlesnakes were once found across much of the country, but habitat loss and efforts by fearful humans to wipe them out reduced their numbers, especially at the northern edges of their range.

In New Hampshire, the disease helped halve the population of rattlesnakes — now estimated at several dozen — after it was first spotted in 2006, although it was only afterward that scientists linked the fungus to the decline, officials said.

Vermont's population of timber rattlesnakes is down to two locations near Lake Champlain in the western part of the state with an estimated total population of several hundred.

An Associated Press reporter was allowed to accompany wildlife officials to a rattlesnake habitat on condition the exact location not be revealed out of concern that too much attention could further threaten them. Blodgett led an hours-long search for some of the elusive creatures until he found a pair hiding in a rocky crevice, though it wasn't clear if they were infected. Later, a healthy single snake was found on the forest floor.

The disease can cause crusty scabs and lesions, sometimes on the head.

Jeffrey Lorch, a microbiologist with the U.S. Geological Survey's National Wildlife Health Center in Madison, Wisconsin, said he's been getting reports of snake fungal disease from all over the eastern United States. Not every location is reporting that the disease is threatening

snake populations.

"It does seem to be a disease that has different effects in different areas," Lorch said.

The fungus poses a greater risk to snakes that reproduce slowly, such as rattlesnakes, which can live up to 30 years, experts say.

In Illinois every year the disease infects about 15 percent of the population of about 300 of massasauga rattlesnakes, most of which are in Clinton County, with a mortality rate of 80 to 90 percent, said Matt Allender, a wildlife veterinarian and epidemiologist at the University of Illinois who started noticing the fungus in 2011. The mortality rate in infected timber rattlesnakes is estimated between 30 and 70 percent, he said.

The fungus' impact on the massasauga is expected to play a part in the U.S. Fish and Wildlife Service's determination on whether to list the snake as endangered, officials said.

"I think that in populations that have been shrunk due to other mechanisms, such as habitat loss, other environmental changes, those types of things, are more at risk of going extinct from snake fungal disease mainly because it's a smaller population," Allender said. "They have less of a buffer to withstand these diseases."

Part of the challenge in studying the disease is that snakes, especially venomous varieties, don't get much sympathy from the public, which makes funding studies harder. Snakes are also harder to find than, say, white-nose-infected bats where scientists can go into a cave and see tens of thousands of carcasses, Lorch said.

The fungus has been found in all five rattlesnake populations in Massachusetts, but it doesn't appear to have had the high mortality rate reported elsewhere, said Anne Stengle, a Ph.D. candidate at the University of Massachusetts who is overseeing a federal grant in nine states to study the fungus.

Since the initial hit, the decline in the Granite State's timber rattlesnakes appears to have stabilized and some are reproducing, said New Hampshire Fish and Game Biologist Mike Marchand.

"I'm at least optimistic that there are animals that are successfully surviving from year to year as well as reproducing," Marchand said. "We had a pretty strong dip in the population."

[back](#) / [top](#)

5. How a Secretive U.S. Agency Discovered the A-Bomb's Effect on People Politico -- 8/9/2015 Arlington, VA

How a Secretive U.S. Agency Discovered the A-Bomb's Effect on People
SUSAN SOUTHARD August 09

When the the second atomic bomb was dropped on Nagasaki on August 9, 1945, 15-year-old Do-oh Mineko was working inside a Mitsubishi factory, eagerly awaiting her lunch break. The massive concrete and steel factory imploded on top of her and thousands of other adults and young people. Doh-oh sustained severe injuries, including a large gash at the back of her head, burns, and glass splinters that remained embedded in her body for the rest of her life. Over the next few months, she developed the symptoms of acute whole-body radiation exposure, including the loss of all her hair, which did not grow back for 10 years. Ashamed of how she looked, she stayed hidden inside her house for years.

When Do-oh was 20, new hope appeared at her door. It was 1949, at the time of year, she remembered, that “the persimmon fruits started to develop color.” Her injuries still hadn’t fully healed, and her hair had not grown back; short, soft fuzz still grew in periodically, then fell out again. “I felt like giving up,” Do-oh remembered. “At about that time, an unfamiliar, foreign car arrived and parked in front of our house.

“‘I have come from the ABCC to take you there,’ the person told us. ‘Please cooperate with our research.’ I got into the car believing that I would be healed by them.” Driving away, Do-oh stared out of the car window. She had no idea of the underlying purposes of the medical examination she would undergo that day or the intense international dispute in which she would play a small part.

Three years earlier, the United States had seized on what it saw as a critical and unique opportunity to conduct long-range scientific and medical research on hibakusha (“atomic bomb-affected people”)—which an Army Medical Corps senior researcher on atomic bomb effects had believed “may not again be offered until another world war.” To this end, President Harry Truman had signed an order to establish the Atomic Bomb Casualty Commission (ABCC), charged with studying atomic bomb survivors to determine how radiation exposure affected their health. U.S. leaders projected that the ABCC’s studies would offer the United States numerous military, scientific and regulatory benefits—including greater understanding of the impact of nuclear weapons currently in development, support for civil defense planning for potential nuclear attacks on U.S. cities and data for the reevaluation of international radiation dose limits for physicians, scientists, radiation workers and patients.

These goals inadvertently reflected how little, prior to the atomic bombings, U.S. scientists and military officials knew about the immediate or long-term impact of whole-body radiation, and they foretold how blatantly the ABCC would ignore the medical needs of the survivors, conducting research only and failing to provide treatment of any kind. Why? Because U.S. leaders believed treating hibakusha would be akin to admitting responsibility for their injuries—a concession the government refused to make.

The choices the agency made in fulfilling its mission ignited a bitter, decades-long controversy between the ABCC and hibakusha, their physicians and research scientists across Japan.

Tensions began early. On paper, the ABCC was established as a collaboration between the United States’ National Research Council and Japan’s National Institute of Health, but in

practice the commission was predominantly funded and controlled by agencies of the U.S. government, and it operated inside a country under U.S. military occupation. After years of vitriolic wartime slurs by each country against the other, U.S. and Japanese scientists distrusted one another's professional integrity and feared the ABCC's research outcomes would be tainted by national bias: Americans were concerned that the Japanese would exaggerate radiation effects for political purposes, and the Japanese worried that the Americans would minimize radiation effects for their own political gain. Japanese doctors working at the ABCC appreciated the United States' advanced scientific methodologies, but some felt disrespected by U.S. physicians' lack of confidence in their medical skills as well as their ability to evaluate research. One American ABCC doctor wrote: "Just the thought of what the Japanese would do if they had free unrestrained use of our data and what they might publish under the imprimatur of the ABCC gives me nightmares."

The imbalance of power at the ABCC was made worse by wage inequities between U.S. and Japanese physicians working there. The agency's longtime policy to designate only U.S. physicians and scientists as directors of each city's operations resulted in the majority of the ABCC's staff—Japanese doctors, nurses and support personnel, including many who had survived the atomic bombs and endured extraordinary losses—having to work under U.S. authority. Extreme insult arose when the United States took full possession of all of the ABCC's research data, study outcome and specimens, in part to prevent other nations from gleaning technical information about the bombs that might advance their own nuclear weapons programs. Even Nagasaki and Hiroshima doctors treating hibakusha on a daily basis had no access to these critical findings that could have supported their diagnoses and care. Nagasaki physician Nishimori Issei reflected that "the ABCC's way of doing research seemed to us full of secrets. We Japanese doctors thought it went against common sense. A doctor who finds something new while conducting research is obligated to make it public for the benefit of all human beings."

In Nagasaki, the ABCC's first offices were set up over a fish market on the wharf, and patients were initially examined at the temporary hospital at Shinkozen Elementary School. During the late 1940s into the early 1950s, thousands of survivors like Do-oh heard a knock at their door and saw an ABCC jeep and staff person waiting outside to transport them to Shinkozen. The ABCC had identified and located them by using the medical studies and informal surveys of hibakusha conducted after the war, and by talking with physicians and scientists, gathering hospital records and enlisting the help of local police. Although the ABCC was not officially under occupation authority, in Nagasaki's post-war climate, some hibakusha felt forced to participate because they perceived the ABCC as a function of the occupation and thereby an extension of the U.S. military. At Shinkozen, they underwent physical examinations and were asked a series of questions about their location at the time of the bombing, distance from the hypocenter, direction they were facing and physical symptoms they had experienced since then. In keeping with the Japanese social custom of reciprocity, ABCC staff sometimes gave survivors small gifts and offered them a taxi ride home.

[back](#) / [top](#)

6. Thousands of mines with toxic water lie under the West

Deseret News -- 8/9/2015 Salt Lake City, UT

Thousands of mines with toxic water lie under the West
Nicholas Riccardi Associated Press, Aug. 9

Beneath the western United States lie thousands of old mining tunnels filled with the same toxic stew that spilled into a Colorado river last week, turning it into a nauseating yellow concoction and stoking alarm about contamination of drinking water.

Though the spill into the Animas River in southern Colorado is unusual for its size, it's only the latest instance of the region grappling with the legacy of a centuries-old mining boom that helped populate the region but also left buried toxins.

Until the late 1970s there were no regulations on mining in most of the region, meaning anyone could dig a hole where they liked and search for gold, silver, copper or zinc. Abandoned mines fill up with groundwater and snowmelt that becomes tainted with acids and heavy metals from mining veins which can trickle into the region's waterways. Experts estimate there are 55,000 such abandoned mines from Colorado to Idaho to California, and federal and state authorities have struggled to clean them for decades. The federal government says 40 percent of the headwaters of Western waterways have been contaminated from mine runoff.

Last week, the Environmental Protection Agency was trying to staunch leakage from a gold mine — not worked since 1923 — high in the San Juan mountains of southern Colorado. But workers moving debris from the mine tunnel accidentally opened up the passage, leading to a million gallons of sludge spilling into a creek that carried it into the Animas River. From there the discharge headed toward the Colorado River, which provides water to tens of millions of Westerners.

"The whole acid draining issue is something we struggle with in the western United States," said Bruce Stover, the Colorado Department of Mining official in charge of dealing with abandoned mines in that state.

One of the complicating factors is money and legal liability. Cleaning up the mines is very costly, and the Clean Water Act says that anyone who contributes to pollution of a waterway can be prosecuted for a federal crime, even if they were trying to clean up pollution. That's kept environmental groups from helping the EPA treat water and tidy up mines. Groups for several years have been pushing for a federal law that would let so-called "Good Samaritan" groups help with cleanup without being exposed to legal liability.

"There's still a whole generation of abandoned mines that needs to be dealt with," said Steve Kandell of Trout Unlimited, one of the organizations backing the bill.

But the Wednesday spill from the Gold King mine shows the amount of damage that the slightest cleanup accident can inflict. The mine is one of four outside the old mining town of Silverton

that have leaked heavy metals into Cement Creek, which flows into the Animas. Cement Creek is so poisoned that no fish live there and the EPA has long registered abnormal levels of acidity and heavy metals in the upper Animas that have also injured aquatic life.

Downstream, though, the Animas flows through the scenic town of Durango and is a magnet for summer vacationers, fishermen and rafters. The river turned yellow Thursday, emitting a sickening stench and sending water agencies scrambling to shut off the taps from the waterway.

The EPA apologized profusely to residents for both the accident and failing to warn anyone for the first 24 hours. During a town hall meeting in Durango on Friday, a restaurant owner asked the EPA if it would compensate businesses for lost revenue, while officials warned that the river may turn yellow again in the spring, when snowmelt kicks up the settled contaminated sediment.

The history of the Gold King and its neighboring mines is also an example of the difficulty in cleaning up old waste. The EPA had initially tried to plug a leak in another mine that drained into Cement Creek, the American Tunnel, but that simply pushed more contaminated water out of the neighboring mines such as Gold King.

"In this day and age, everyone wants the quick fix, but these things take time," said Jason Willis, an environmental engineer who works with Trout Unlimited in Colorado. "These are site-specific tasks."

Stover said it was particularly galling that the Animas was contaminated by the very chemicals that environmental officials have been trying to remove from its watershed.

"It's very unfortunate," Stover said. "We've been fighting this war for years, and we've lost a battle. But we're going to win the war."

[back](#) / [top](#)

7. Plume from EPA mine spill likely headed for Lake Powell; visitors to be warned starting Monday

Deseret News -- 8/9/2015 Salt Lake City, UT

Plume from EPA mine spill likely headed for Lake Powell; visitors to be warned starting Monday

By Ivan Moreno And Jacques Billeaud Associated Press, Aug. 9

Mustard-colored wastewater laced with heavy metals continues to drain into a river from an abandoned mine in southwestern Colorado at a rate of about 550 gallons per minute, according to the Environmental Protection Agency, which caused the spill.

The rate of discharge Saturday was down from about 740 gallons per minute on Friday. But three days after the massive spill, the agency said it still didn't know what the possible environmental and health impacts are.

The agency said it hoped to have a thorough lab analysis of the contaminants — which include lead and arsenic — as soon as Sunday morning.

"We're busting our tails to get that out," Environmental Protection Agency Regional Director Shaun McGrath said. "We know the importance to people to have this information."

In the meantime, the EPA said it had finished building two containment ponds to treat the yellow sludge. However, the ponds are meant to immediately address the spill and cleanup efforts will likely take a long time. McGrath could not say whether that means days or weeks.

"This is a long-term impact. The sediment, the metals that are in that sediment are going to settle out to the stream bottom," he said. "As we have storm surges, as we have flooding events, that sediment can and likely will get kicked back up into the water. We're going to have to do ongoing monitoring."

About 1 million gallons of wastewater from Colorado's Gold King Mine began spilling into the Animas River on Wednesday when an EPA-supervised cleanup crew accidentally breached a debris dam that had formed inside the mine.

The mine has been inactive since 1923.

The plume reached the northern New Mexico cities of Aztec on Friday night, Farmington on Saturday morning and Kirtland on Saturday afternoon. The plume has been visually diluted and the leading edge of it is far less defined. The water is reported to be muddy with an orange tinge rather than solid orange.

Local government officials in New Mexico and Colorado have blasted the EPA, saying they didn't alert communities soon after the spill and that answers have been slow in coming.

"There's not a lot we can do. We can keep people away (from the river) and keep testing. We still don't know how bad it is," San Juan County Emergency Management Director Don Cooper said.

Officials in both cities shut down the river's access to water treatment plants and say the communities have a 90-day supply of water and other water sources to draw from.

No health hazard has been detected yet. In addition to lead and arsenic, federal officials say the spill contains cadmium, aluminum, copper and calcium, but the concentrations were not yet known.

Water samples were also tested in New Mexico, but no results have been released.

In addition to New Mexico, wastewater from the mine was also inching toward Utah.

The Animas flows into the San Juan River in New Mexico, and the San Juan flows into Utah, where it joins the Colorado River in Lake Powell.

Officials said the contamination would likely settle into sediment in Lake Powell. Glen Canyon National Recreation Area officials said visitors will be warned starting Monday to avoid drinking, swimming or boating on affected stretches of the lake and river until further notice.

The spill from the mine flowed down Cement Creek and into the scenic Animas River, which is popular with boaters and anglers. Aerial photos showed the slow-moving yellow water snaking by scenic mountain roads surrounded by pine trees.

While awaiting further results on the concentration levels of the metals in the water, the EPA released results Saturday showing how acidic the water became after the spill.

In Cement Creek, near the spill, the water registered a pH level of 3.74, which the EPA said is similar to the acidity of tomato juice and apples. Further downstream, in Silverton, pH levels were found to be about 4.8, which is similar to liquid black coffee.

The EPA warned people to stay out of the river and to keep domestic animals from drinking from it. Local officials declared stretches of the river off-limits in Colorado and New Mexico.

At least two of the heavy metals found in the waste water can be lethal for humans with long-term exposure. Arsenic at high levels can cause blindness, paralysis and cancer. Lead poisoning can create muscle and vision problems for adults, harm development in fetuses and lead to kidney disease, developmental problems and sometimes death in children, the EPA said.

When the spill happened, the EPA-supervised crew was trying to enter the mine to pump out and treat the water, EPA spokeswoman Lisa McClain-Vanderpool said.

[back](#) / [top](#)

8. Animas River mine spill: La Plata and Durango declare state of emergency Denver Post, The -- 8/10/2015 Denver, CO

Animas River mine spill: La Plata and Durango declare state of emergency

La Plata County and Durango declare state of emergency, as EPA remains unsure what impact on health mine spill might have.

By Tom McGhee The Denver Post 08/10/2015

Three million gallons of water containing mining waste has poured into the Animas River since Wednesday, and it is still unclear what the environmental and health impact of the spill, caused by the Environmental Protection Agency, will be.

Water collected at sampling stations along Cement Creek and the upper Animas found higher-than-normal levels of arsenic and other heavy metals, Deborah McKean, an EPA toxicologist, said in a Sunday conference call with the media.

But the levels are dropping as the plume drifts farther down the river and is diluted. "Those

concentrations increase for a few hours and then decrease again by the next sampling period," she said. "Those numbers are high and they are scary because they seem so high. However, risk associated with exposure to a chemical is a matter of how much of the chemical you are exposed to."

It remains unclear if the spill poses health risks to humans and aquatic life.

On Sunday, La Plata County and Durango both declared a state of emergency as a result of the spill, which originated at a mine near Silverton.

"This action has been taken due to the serious nature of the incident and to convey the grave concerns that local elected officials have to ensure that all appropriate levels of state and federal resources are brought to bear to assist our community not only in actively managing this tragic incident but also to recover from it," La Plata County Manager Joe Kerby said in a release.

On Sunday, the EPA posted reports on its website including sample data taken from the river at different locations that detail how much metal is in the water. Tom Dea, vice president for TZA Water Engineers in Lakewood, reviewed those reports for The Denver Post.

Dea said because the latest report on the site shows data from Aug. 6, it would be inaccurate to report on those numbers now since the data will be "continually changing" as the pollution makes its way through the water.

Animas River map (The Denver Post)

Wastewater from Gold King Mine started spilling after an EPA-supervised cleanup crew accidentally breached a debris dam inside the inactive mine last Wednesday. The EPA originally reported 1 million gallons spilled into the river. On Sunday, the agency revised that to 3 million gallons after the EPA used a stream gauge from the U.S. Geological Survey.

The mine continues to discharge about 500 gallons of water per minute into ponds, where it is being treated before it goes into Cement Creek, where it is carried into the river.

The city of Durango uses drinking water from the Animas. But an intake valve was turned off before contaminated water reached it, city officials said. "Your water never has been and never will be contaminated," Durango Mayor Dean Brookie said at a Sunday public forum, referring to the city's tap water. "Your water is safe to drink."

Some residents along the river who rely on wells for drinking water have told the EPA that their water is discolored. EPA teams are checking water in those locations, Mc Kean said. The agency is providing drinking water to those who need it.

Some toxins will settle on the river bottom, said Shaun McGrath, EPA regional chief. Future storms will kick up sediment, so the river will require continued monitoring.

The discolored water from the spill stretched more than 100 miles Sunday from where it originated, reaching the New Mexico municipalities of Farmington, Aztec and Kirtland.

The leading edge of the plume was headed toward Utah and Montezuma Creek near the town of Bluff, a tourist destination.

Officials were preparing to shut down two wells that serve Montezuma Creek, said Rex Kontz, deputy general manager for the Navajo Tribal Utility Authority.

At a Sunday public forum, citizens affected by the pollution peppered the EPA with questions, demanding answers to questions such as "what do I tell the employees of my river rafting business?" and "what are you doing now to address the long-term effects of this disaster?"

A representative from the Navajo Nation also took the stage to address the crowded room.

Navajo Nation President Russell Begaye has said he intends to sue the EPA for the massive release of mine waste, according to nativenewsonline.net.

[back](#) / [top](#)

9. EPA orders more air quality tests for homes near Superfund sites Los Angeles Times -- 8/10/2015 Los Angeles, CA

EPA orders more air quality tests for homes near Superfund sites
Tony Barboza

The U.S. Environmental Protection Agency has ordered a new round of air quality tests for a South Bay neighborhood after detecting a variety of contaminants inside homes near two federal cleanup sites.

The EPA sampled 107 homes near the Del Amo and Montrose Superfund sites earlier this year under pressure from residents worried they are breathing dangerous chemicals seeping in their homes from a plume of tainted groundwater below.

The tests detected pollutants associated with the cleanup sites, including benzene, chloroform and trichloroethylene, at levels above the agency's health standards for long-term exposure.

The concentrations are not high enough to pose an urgent health risk to residents, said Dana Barton, who supervises the Superfund sites for the EPA's regional office in San Francisco. "But we did find some levels of concern."

Barton said some of the compounds could be from bathroom cleaners, painting supplies and other products in peoples' homes, and others are probably coming from vehicle exhaust and refinery emissions in outdoor air.

"The question now for us is how much, if at all, the Superfund sites are contributing," Barton said.

Cynthia Babich, a former resident who directs the neighborhood advocacy group Del Amo Action Committee, called the results "scary and confusing" and accused the EPA of "minimizing the chance that there could be a problem in the community."

Worries over indoor air are only the latest environmental problems in this unincorporated community near Torrance. Residents have contended with decades of alarming discoveries, including soil laced with the pesticide DDT that led to the demolition of more than 60 homes and excavations of two dozen frontyards.

The neighborhood sits next to some of the nation's worst chemical dumping grounds: the former Montrose Chemical Corp. DDT plant that operated from 1947 to 1982, the Del Amo synthetic rubber plant built by the U.S. government during World War II and other industrial operations. Over decades, the facilities dumped chemical waste into pits, ponds, trenches, sewers, stormwater channels and the Pacific Ocean.

Now, the EPA is overseeing a lengthy cleanup at the Montrose and Del Amo sites under its Superfund program. It has cost more than \$48 million to date.
See the most-read stories this hour >>

The recent testing was intended to find out whether volatile compounds in polluted groundwater is evaporating through the soil and into homes, a process called vapor intrusion.

Most concerning was the discovery of trichloroethylene, or TCE, in five homes. The industrial solvent pollutes groundwater in the neighborhood and other cleanup sites across the nation.

Recent scientific studies show that inhaling TCE poses a higher cancer risk than previously thought and can cause heart defects in developing fetuses. Those findings have brought new scrutiny from federal environmental regulators, who have launched investigations to search for TCE vapors at more than a dozen other Superfund sites in California.

In almost every South Bay home tested, the EPA detected benzene, chloroform and carbon tetrachloride — chemicals that were used or dumped at the old industrial sites — above its long-term screening levels for indoor air. About 20 of the homes had 1,2 dichloroethane and 1,4 dichlorobenzene and other volatile compounds at more than 100 times the EPA's screening levels.

Concentrations above screening levels do not indicate an immediate health risk, EPA officials stressed, but they do warrant further investigation.

A 2010 EPA assessment found that vapors were migrating into commercial buildings that sit over the former Del Amo site, Barton said. More recent data have shown polluted groundwater growing shallower and closer to residents, with levels of TCE and other contaminants increasing below some homes.

Scott Hookey and his wife moved to the neighborhood last year. They had decided to try to have their first child and didn't know the home they had rented was near two chemical waste sites.

It wasn't until a flier arrived in the mail over the winter that Hookey, a 31-year-old Marine Corps veteran and USC grad student, learned of concerns over potentially harmful vapors and arranged for their home to be tested. The EPA found TCE and other contaminants above long-term screening levels in a bedroom they planned to use as a nursery.

"We've had to rethink our plan of having a kid while we're living here," Hookey said. "We can't do it."

In addition to a second round of testing at about 40 homes later this year, the EPA said it will drill through driveways, concrete slabs and other surfaces throughout the neighborhood, inserting probes to search for soil gas that could be collecting underground.

[back](#) / [top](#)

10. How to Protect Yourself From Junk Food Science A guide for reasonable consumers Bloomberg -- 8/10/2015 New York City, NY

How to Protect Yourself From Junk Food Science A guide for reasonable consumers
John Tozzi August 10, 2015

Does aspartame cause cancer? You've probably heard that it might. And PepsiCo removing the artificial sweetener from Diet Pepsi suggests there's something iffy about it. New Diet Pepsi cans boast that the beverage is "now aspartame free," a statement probably meant to placate consumers who cite aspartame as the reason they're cutting back on the beverage.

Whether or not PepsiCo's move lifts sagging diet soda sales, it's a decision rooted in marketing rather than science. Decades of investigation have turned up no credible evidence that aspartame is harmful to humans in the amounts diet soda drinkers are likely to consume. Someone would have to drink about 20 cans of diet soda a day to reach the U.S. Food and Drug Administration's recommended daily limit for aspartame, and even that amount is just 1 percent of the level that raised health concerns in lab rats, according to the American Cancer Society. That group, along with the U.S. National Cancer Institute, the European Food Safety Authority, and Britain's Food Standards Agency, all agree that aspartame is safe to consume.

Some people will believe what they want to regardless of what the evidence says. Others want to make good choices about what they eat, but the information needed to make those decisions is a cacophony of often conflicting claims from marketers, academics, activists, and the media.

Consumers can exhaust themselves trying to assess the risks of GMOs, BPA, meat from animals raised with antibiotics, or whether goji berries will help them live longer. The evidence can range from outright bunk to solid consensus—and many degrees in between. But it's possible, with a basic understanding of nutrition science and a bit of effort, to make rational decisions based on science rather than speculation, marketing, or propaganda. Here's a guide for reasonable people.

Be skeptical

You have to be especially skeptical of food claims. Medications are tested in double-blind, placebo-controlled trials to measure the effects of the drug isolated from other factors that might bias results. That's basically impossible in nutrition. "To test this sort of thing, you would have to put people in a locked metabolic ward for decades," says Marion Nestle, a New York University nutrition professor and food writer.

Most nutrition science is observational, which means researchers track people over time. Studies can try to control for other factors, like whether people who eat more vegetables are also more likely to exercise. But evidence from this kind of research is inherently weaker than randomized control trials.

For example, a study earlier this year linked diet sodas to widening waistlines in senior citizens tracked over nearly a decade. But the association doesn't tell you whether diet soda caused people to gain weight. Maybe people who were already putting on pounds decided to drink more diet soda.

Look for scientific consensus

Any one article can mislead. Small studies or short duration experiments are especially prone to mistaking random variation for meaning. That's how one provocateur, using valid study results, fooled some reporters into writing that chocolate aids weight loss. "If it sounds fantastic, it probably is," Nestle says. "That immediately eliminates breakthroughs."

Science is a process that accumulates evidence over time. "Sometimes people will take a study in rats or even in test tube data and extrapolate it to humans," says Don Hensrud, director of the Mayo Clinic Healthy Living program. Look for consensus statements from scientific authorities that have evaluated all the research. The FDA has pages of information on ingredients and additives. So does the European regulator. If you have a specific health condition, look for guidance from medical foundations such as the American Diabetes Association. Or search for studies that incorporate lots of research, like systematic reviews or meta-analysis.

Consider your entire diet

People tend to latch on to findings about particular ingredients they think are especially harmful or beneficial. Kristin Kirkpatrick, manager of nutrition services at the Cleveland Clinic's wellness institute, recalls a diabetic patient who drank three cups of cranberry juice every night, because he had read that cranberries can help prevent bladder infections. He'd had one bladder infection five years ago. Meanwhile, the cranberry juice was driving up his blood sugar.

"I will have patients whose diet is really in trouble, really, really in trouble, and they'll come back and say, 'It's not that bad because everything I eat is organic,'" Kirkpatrick says. "An organic chocolate chip cookie is still a chocolate chip cookie." Focusing narrowly on certain foods can obscure bigger nutritional problems.

Think about where food comes from

Just because aspartame doesn't cause cancer doesn't mean Diet Pepsi is a healthy choice. The evidence suggests it's probably better than cola with added sugar. But if you really want a

healthy diet, soda shouldn't be a big part of it. "Mainstream dietary advice tells you to eat lots of fruits and vegetables, eat foods from animals in smaller amounts, and minimize junk food," says Nestle. "All of the business about artificial colors and flavors, those are markers for junk food."

Supermarkets don't slap labels on apples or eggplants boasting of their health benefits. "Do I really need to do a full-on Internet search and look for studies to determine if blueberries are good for me?" Kirkpatrick says. "Typically the best foods that are out there for our health, for our weight, for everything, need no claims."

[back](#) / [top](#)

11. 'They're not going to get away with this': Anger mounts at EPA over mining spill FOX News Network -- 8/10/2015 New York, NY

'They're not going to get away with this': Anger mounts at EPA over mining spill
Joseph J. Kolb August 10 ALBUQUERQUE, N.M.

Anger was mounting Monday at the federal Environmental Protection Agency over the massive spill of millions of gallons of toxic sludge from a Colorado gold mine that has already fouled three major waterways and may be three times bigger than originally reported.

An 80-mile length of mustard-colored water -- laden with arsenic, lead, copper, aluminum and cadmium -- is working its way south toward New Mexico and Utah, following Wednesday's accidental release from the Gold King Mine, near Durango, when an EPA cleanup crew destabilized a dam of loose rock lodged in the mine. The crew was supposed to pump out and decontaminate the sludge, but instead released it into tiny Cement Creek. From there, it flowed into the Animas River and made its way into larger tributaries, including the San Juan and Colorado rivers.

"They are not going to get away with this," said Russell Begaye, president of the Navajo Nation, which intends to sue the EPA.

Visible from the air, the toxic slick prompted EPA Region 8 administrator Shaun McGrath to acknowledge the possibility of long-term damage from toxic metals.

"Sediment does settle," McGrath said. "It settles down to the bottom of the river bed."

McGrath said future runoff from storms will kick that toxic sediment back into the water, which means there will need to be long-term monitoring.

The toxic waste passed through Colorado's San Juan County on Saturday, heading west. People living along the Animas and San Juan rivers were advised to have their water tested before using it for cooking, drinking or bathing. That was expected to cause major problems for farmers and ranchers, who require large quantities of water from the river for their livelihoods.

New Mexico Gov. Susana Martinez inspected the damage in Farmington over the weekend and came away stunned.

"The magnitude of it, you can't even describe it," she said. "It's like when I flew over the fires, your mind sees something it's not ready or adjusted to see."

The EPA and the New Mexico Environment Department plan to test private wells near the Animas to identify metals of concern from the spill. Tests on public drinking water systems are handled by the state environment department, the agencies said.

Begaye said Saturday at a community meeting in Shiprock, N.M., that he intends to take legal action against the U.S. Environmental Protection Agency for the massive release of mine waste into the Animas River near Silverton, Colorado.

"The EPA was right in the middle of the disaster and we intend to make sure the Navajo Nation recovers every dollar it spends cleaning up this mess and every dollar it loses as a result of injuries to our precious Navajo natural resources," Begaye said. "I have instructed Navajo Nation Department of Justice to take immediate action against the EPA to the fullest extent of the law to protect Navajo families and resources."

Begaye said the plume of sludge has made its way into the San Juan River and is wending through the Navajo Nation, the nation's largest Indian reservation. It is expected to reach the heavily used Lake Powell by Wednesday.

David Ostrander, an EPA spokesman, said last week the agency is taking responsibility for the incident.

"We typically respond to emergencies, we don't cause them, but this is just something that happens when we are dealing with mines sometimes," Ostrander said.

The infiltration of toxic material is a haunting memory for the Navajos who are still reeling and experiencing the adverse health effects of a uranium waste spill into a river outside of Gallup, N.M., some 36 years ago. On July 16, 1979, a dam failed in a uranium waste pond spilling 1,100 tons of solid radioactive mill waste and approximately 93 million U.S. gallons of acidic and radioactive tailings solution into a nearby river tributary.

There have been claims the amount of radiation released in the Churchrock incident exceeded Three Mile Island.

[back](#) / [top](#)

12. Work, pedal, and be happy **ScienceDaily -- 8/10/2015 Rockville, MD**

Work, pedal, and be happy
August 10, 2015 University of Iowa

A new study from the University of Iowa finds that inspiring office employees to be active at work could be as easy as pedaling a bike -- and they don't have to leave their desks.

By providing workers with a portable pedaling device under their desks, Lucas Carr, assistant professor of health and human physiology and member of the Obesity Research and Education Initiative at the UI, discovered that people who were once sitting all day were now moving at work without getting up.

Better yet, the study also found that workers who pedaled more were more likely to report weight loss, improved concentration while at work, and fewer sick days than co-workers who pedaled less.

But there's a catch.

Carr says key to the findings was providing workers with a pedaling device that was not only comfortable and easy to use, but was theirs alone to pedal.

"We wanted to see if workers would use these devices over a long period of time, and we found the design of the device is critically important," Carr says.

Another essential component was privacy. Place a high-end exercise bike or treadmill desk in the hall as a shared device, and very few employees will use them, Carr says.

"It's a great idea in theory, but it doesn't work over the long haul for most people."

Carr's study appeared this month in the American Journal of Preventive Medicine. He also shared his findings this spring at the 2015 Society of Behavioral Medicine's Annual Meeting in San Antonio, Texas.

Carr's 16-week pilot study was the third and longest in a series of studies he has conducted testing portable pedal machines among workers with sedentary jobs. His interest stems from growing evidence that people who sit all day -- even if they're active outside of work -- are at increased risk for serious health conditions such as multiple chronic diseases, poorer cognitive function, and mental distress.

To make matters worse, sedentary jobs have risen 83 percent since 1950 and currently account for 43 percent of all jobs in the United States, according to recent studies. The World Health Organization (WHO) estimates 3.3 million people die annually due to physical inactivity, making it the fourth leading cause of mortality.

Carr's research over the years has found that the best way to get people moving at work is to change the environment in such a way that makes being active easier -- a strategy his latest study shows can pay off for both employees and their employers.

"A lot of companies have gone the route of building expensive fitness facilities, that typically get

used only by the most healthy employees," Carr says. "The people who need to improve their health the most are less likely to use worksite fitness facilities."

Carr says providing an employee with an option to be active right at their desk might be an effective way to improve the health of employees who are reluctant to exercise and could possibly reduce health care costs for employers.

"This is something that could be provided to just about any employee, regardless of the size of their company or office," he says. "It's right at their feet, and they can use it whenever they want without feeling self-conscious in front of their co-workers."

In Carr's most recent study, 27 employees working at ACT, Inc., a company in Iowa City, volunteered to have an activeLife Trainer™ pedal device placed under their desk. An activity monitor connected to the pedaling devices tracked each participant's daily pedal time, which averaged 50 minutes a day over 16 weeks.

In addition, participants were sent three emails a week, providing them with tips for how to move more at work and reminders to shift their posture and stand on a regular basis.

At the end of the study, 70 percent of participants chose to keep their pedaling device -- an unexpected response that gives Carr hope.

"We are really looking to identify sustainable solutions," he says. "That's what we are working towards -- how do we help people engage in healthy behaviors that can be sustained over the long term."

Story Source:

The above post is reprinted from materials provided by University of Iowa. Note: Materials may be edited for content and length.

[back / top](#)

13. Re-thinking 'adaptive radiation,' one of biology's most important concepts ScienceDaily -- 8/10/2015 Rockville, MD

Re-thinking 'adaptive radiation,' one of biology's most important concepts
August 10, 2015 University of Lincoln

A lizard lineage which has evolved over the last 19 million years has helped scientists to re-think one of the most important concepts of modern biology.

'Adaptive radiation' is recognised as a pillar of evolutionary science. It describes the

development of new biodiversity, and is triggered when a species encounters a new environment with plenty of available resources -- this is called 'ecological opportunity'. This single species then makes the most of these resources and multiplies rapidly into several new forms. When all these resources have been used up by new species, the process of biodiversity proliferation slows down dramatically.

'Early-bursts' of new species diversification have previously been seen as a central part of this process -- scientists have for decades referred to this trend as a key component of adaptive radiation. However, new research published in the academic journal BMC Evolutionary Biology suggests that the term should not be defined by these early rapid surges.

The revelation comes from scientists at the University of Lincoln, UK, who have been investigating the evolution of the *Liolaemus* lizard -- one of the most species-rich and ecologically diverse lineages of vertebrates.

Their study suggests that the gradual uplifts of the Andes mountain range in South America over millions of years led to the episodic emergence of ecological opportunity, which in turn caused several waves of diversification in this group of lizards. As a result, they found a number of peaks of originations diversification of new *Liolaemus* lizard species, rather than one 'early-burst'.

Dr Daniel Pincheira-Donoso, Senior Lecturer in the School of Life Sciences at the University of Lincoln, explained: "Our research shows that the diversification of the *Liolaemus* lizards has occurred in a number of episodes over an extended period of time. As the Andes uplifted, new ecological opportunity continued to emerge and new bursts of diversification took place -- there was never an early explosion followed by a slow-down, but instead, constant pulses of new species evolution.

"We therefore suggest that the definition of the adaptive radiation theory does not need to include reference to an 'early-burst'. We instead propose that adaptive radiation should refer to lineages which, via natural selection, proliferate into multiple new species that differ in their ecological adaptations -- regardless of whether this occurred early in the cycle or not."

The researchers chose to study the *Liolaemus* lizards because these reptiles have adapted to an exceptionally wide range of ecological and climatic conditions, including extreme deserts, cold climates, and high Andean elevations. There are currently more than 240 known *Liolaemus* lizard species, and this widespread lineage offers a unique model to investigate the causes and trajectories of adaptive radiations.

Part of the research project formed the basis of student Lilly Harvey's undergraduate dissertation at the University of Lincoln. Lilly, who is now studying a Masters in Research in Lincoln's School of Life Sciences, said: "As a young aspiring scientist it has been a fantastic opportunity to work on research of this magnitude."

The research also presents new findings about the locations of adaptive radiation. It was previously thought that situations leading to adaptive radiation occurred mostly on islands --

where major climactic or geographic events are more likely to significantly change environments -- however the Lincoln team conclude that ecological opportunity on mainland continents can still be a strong and crucial driver of adaptive radiation, even if it occurs less frequently.

Story Source:

The above post is reprinted from materials provided by University of Lincoln. Note: Materials may be edited for content and length.

[back](#) / [top](#)

14. Former Justice Stevens calls mercury ruling 'mind-boggling' **E&E Publishing, LLC -- 8/7/2015 Washington, D.C.**

Former Justice Stevens calls mercury ruling 'mind-boggling'
Jeremy P. Jacobs, E&E reporter, August 7, 2015

Former Supreme Court Justice John Paul Stevens, the author of a seminal decision on when courts must defer to agencies, said the high court's decision this year to invalidate U.S. EPA's air standards for mercury and other toxics was "truly mind-boggling."

In June, the court ruled that EPA should have considered costs in determining whether it was "appropriate and necessary" to promulgate its mercury and air toxics standards, or MATS.

More than 20 Republican-led states and various industry groups challenged the 2011 rules, and the court's conservative wing -- in a 5-4 decision -- held that EPA should have read the "appropriate" to include the rule's \$9.6 billion price tag (Greenwire, June 29).

Stevens, speaking at an American Bar Association meeting on litigation in Chicago at the end of last month, called the decision, written by Justice Antonin Scalia, a "truly remarkable departure from the majority's love affair with dictionary definitions as the primary guide to determining the meaning of statutes."

Appointed by Republican President Ford to the Supreme Court in 1975, Stevens was considered a member of the court's liberal wing when he retired from the bench in 2010.

In 1984, he wrote the majority opinion in *Chevron v. Natural Resources Defense Council*, which held that if a law is ambiguous, courts must defer to an agency's interpretation as long as it is reasonable.

He said the court's decision in the mercury case was a stark departure from that precedent.

Stevens noted that the "appropriate" finding was only the first phase of the regulation. After making that determination, EPA then considered costs in setting the relevant emission control standards, which the agency estimated would save 11,000 premature deaths.

The former justice said that instead of "simply accepting the plain meaning" of appropriate and necessary, or deferring to EPA's "reasonable" reading, the court invalidated the regulations.

"The decision rested squarely on the majority's conclusion that the agency has misinterpreted the words 'necessary and appropriate,'" Stevens said, "As a former English major in college, and as the author of the majority opinion in Chevron, I find that conclusion truly mind-boggling."

Stevens concluded that the decision's reasoning is troubling.

"Such a free-wheeling statutory decision can do even more harm -- both to the public health and to the court itself," he said, "than misinterpretations of the Constitution."

[back](#) / [top](#)

15. China 'exporting' ozone pollution to US, study says Agence France-Presse (AFP) -- 8/10/2015 Paris, FR

China 'exporting' ozone pollution to US, study says
August 10, 2015 PhysOrg

Progress slashing unhealthy ozone in the western United States has been largely undone by pollution wafting across the Pacific from China, according to a study published Monday.

Scientists have long suspected this might explain why ozone levels along the US west coast remained constant despite a significant local reduction in ozone-forming chemicals.

The study, published in Nature Geoscience, is the first to make the case using satellite observations coupled with computer models of how air-borne molecules travel in the lower atmosphere, the authors said.

"The dominant westerly winds blew this air pollution straight across to the United States," explained lead research Willem Verstraeten of the Royal Netherlands Meteorological Institute.

"In a manner of speaking, China is exporting its air pollution to the West Coast of America," he said in a statement.

Nitrous Oxide emissions from vehicle traffic and industry, mixed with sunlight, create dirty-yellow blankets of ozone smog that sting the eye and scratch the throat.

Close to the ground, this pollution causes respiratory problems, damages crops, and is an important source of greenhouse gases.

By imposing stringent standards for motor vehicles and industry, state and national government

in the US succeeded in cutting ozone-producing nitrous oxide emissions by 20 percent from 2005 to 2010.

Those efforts, however, were undermined by China's galloping growth, which pushed its own ozone levels up over the same period by about seven percent.

Molecules moving across the Pacific travel in the lowest layer in the atmosphere, called the troposphere, which reaches up to 17 kilometres (10.5 miles) above Earth's surface, depending on latitude.

The satellite data used in the study zeroed in on a zone nine and three kilometres high, unable to penetrate further.

There is a strong correlation between ozone at that level and closer to Earth's surface.

Approximately half of the increase in ozone over China during the 2005-2010 period came from the ground up, and half descended from the stratosphere, the study found.

And some portion of the man-made ozone above China may not have been of its own making.

"China itself lies downwind from India and other parts of Asia," notes Roth Doherty of the University of Edinburgh in a commentary, also in Nature Geoscience.

"It remains to be established how the free tropospheric ozone trend over China is in turn influenced by emissions upwind."

Verstraeten concludes by suggesting that local or national efforts to improve air quality will have limited impact unless dealt with on an international scale.

"Our atmosphere is global rather than local," he said by email.

Ozone in the stratosphere, which extends between 17 and 50 kilometres above Earth, acts to protect against dangerous ultraviolet rays.

Journal reference: Nature Geoscience

[back](#) / [top](#)

16. Portable ultra-broadband lasers could be key to next-generation sensors **PhysOrg.com -- 8/10/2015 Internet**

Portable ultra-broadband lasers could be key to next-generation sensors
August 10, 2015 Amanda Morris

The invisible chemicals around and within us can tell many complicated stories. By sensing

them, security agents can uncover explosive threats. By monitoring them in our breath, doctors can diagnose serious illnesses. And by detecting them on distant planets, astronomers may find signs of life.

These chemicals sometimes reveal their secrets when probed with mid-infrared wavelength lasers. Nearly all chemicals, including explosives, industrial, and pollutants, strongly absorb light in the mid-infrared wavelength region, which is often called the "fingerprint region" for chemicals.

But lasers that work within this range have limitations. Larger, optically pumped lasers are too complex to use out in the field, and compact, lightweight diode laser sources have a limited spectral range. Now Manijeh Razeghi and her team at Northwestern University's Center for Quantum Devices have used quantum mechanical design, optical engineering, and materials development to create a custom-tailored, compact laser diode by integrating multiple wavelength emitters into a single device.

Capable of emitting broadband wavelengths on demand, the device is smaller than a penny and works at room temperature. It can also emit light at frequencies within +/- 30 percent of the laser central frequency, which has never before been demonstrated in a single-laser diode.

Supported by the National Science Foundation, US Department of Homeland Security, Naval Air Systems Command, and NASA, the research is described online in the August issue of Optics Express journal.

"When we started, we knew this technology had great potential," said Razeghi, Walter P. Murphy Professor of Electrical Engineering and Computer Science at Northwestern's McCormick School of Engineering. "It has always been my dream to have such broadband sources, but it took a lot of effort and experience to realize a truly useful device. We can access any frequency in the laser's range on demand at room temperature, which is ideal for sensing applications."

Provided by: Northwestern University

[back](#) / [top](#)

17. Potentially toxic chemicals flood Animas River **KOAT News -- 8/10/2015 ALBUQUERQUE, N.M.**

Potentially toxic chemicals flood Animas River
3 million gallons of contaminated water turn river orange
Laura Thoren Aug 10 KOAT News

FARMINGTON, N.M. —A massive amount of toxic chemicals are still leaking into to the

Animas River at the rate of 500 gallons per minute, according to the Environmental Protection Agency.

An EPA crew caused the spill last Wednesday while they were trying to clean up an abandoned mine. Since then, the EPA has come under fire, especially because they didn't alert anyone for 24 hours.

The levels of some chemicals are 3,000 times higher than normal in parts of the river. The river has also turned an alarming shade of orange.

What began as 1 million gallons of water, mixed with potentially toxic substances like lead, arsenic and mercury flowing into the Animas, has grown to three times that amount.

New Mexico's Environment Department said the spill is a big problem. The EPA waited 24 hours to tell the media about the spill and Trais Kliphuis said it has not kept her department up to speed on the evolution of the orange mess.

"We're concerned because we don't really know what's happening," Kliphuis said. "Our concern is also that EPA has different regional offices and they're not coordinating. There isn't strong leadership from headquarters that's having meetings with all the states, all the offices, and we can get data in real time."

Without that data, Kliphuis said the environment department cannot do its job to make sure the drinking water in and around the Farmington area is safe.

So the state's scientists and leaders are taking matters into their own hands.

San Juan County officials said they took the necessary steps to protect municipal water systems, but the state is also monitoring wells to see if they are affected.

The EPA dodged several questions during on a news conference Sunday, especially when it came to the potentially toxic metals in the water.

Officials kept saying that they didn't have the data in front of them. That data, however, was available on the EPA website.

[back](#) / [top](#)

18. Coca-Cola Funds Scientists Who Shift Blame for Obesity Away From Bad Diets New York Times -- 8/9/2015 New York, NY

Coca-Cola Funds Scientists Who Shift Blame for Obesity Away From Bad Diets
Anahad O'Connor August 9, NYTimes

Coca-Cola, the world's largest producer of sugary beverages, is backing a new "science-based" solution to the obesity crisis: To maintain a healthy weight, get more exercise and worry less about cutting calories.

The beverage giant has teamed up with influential scientists who are advancing this message in medical journals, at conferences and through social media. To help the scientists get the word out, Coke has provided financial and logistical support to a new nonprofit organization called the Global Energy Balance Network, which promotes the argument that weight-conscious Americans are overly fixated on how much they eat and drink while not paying enough attention to exercise.

"Most of the focus in the popular media and in the scientific press is, 'Oh they're eating too much, eating too much, eating too much' — blaming fast food, blaming sugary drinks and so on," the group's vice president, Steven N. Blair, an exercise scientist, says in a [recent video announcing the new organization](#). "And there's really virtually no compelling evidence that that, in fact, is the cause."

Health experts say this message is misleading and part of an effort by Coke to deflect criticism about the role sugary drinks have played in the spread of obesity and Type 2 diabetes. They contend that the company is using the new group to convince the public that physical activity can offset a bad diet despite [evidence that exercise has only minimal impact on weight](#) compared with what people consume.

This clash over the science of obesity comes in a period of rising efforts to tax sugary drinks, remove them from schools and stop companies from marketing them to children. In the last two decades, consumption of full-calorie sodas by the average American [has dropped by 25 percent](#).

"Coca-Cola's sales are slipping, and there's this huge political and public backlash against soda, with every major city trying to do something to curb consumption," said Michele Simon, a public health lawyer. "This is a direct response to the ways that the company is losing. They're desperate to stop the bleeding."

Coke has made a substantial investment in the new nonprofit. In response to requests based on state open-records laws, two universities that employ leaders of the Global Energy Balance Network disclosed that Coke had donated \$1.5 million last year to start the organization.

Since 2008, the company has also provided close to \$4 million in funding for various projects to two of the organization's founding members: Dr. Blair, a professor at the University of South Carolina whose research over the past 25 years has formed much of the basis of federal guidelines on physical activity, and Gregory A. Hand, dean of the West Virginia University School of Public Health.

Records show that the network's website, [gebn.org](#), is registered to Coca-Cola headquarters in Atlanta, and the company is also listed as the site's administrator. The group's president, James O. Hill, a professor at the University of Colorado School of Medicine, said Coke had registered the website because the network's members did not know how.

“They’re not running the show,” he said. “We’re running the show.”

Coca-Cola’s public relations department repeatedly declined requests for an interview with its chief scientific officer, Rhona Applebaum, who has called attention to the new group on Twitter. In a statement, the company said it had a long history of supporting scientific research related to its beverages and topics such as energy balance.

“We partner with some of the foremost experts in the fields of nutrition and physical activity,” the statement said. “It’s important to us that the researchers we work with share their own views and scientific findings, regardless of the outcome, and are transparent and open about our funding.”

Dr. Blair and other scientists affiliated with the group said that Coke had no control over its work or message and that they saw no problem with the company’s support because they had been transparent about it.

But as of last week, the group’s Twitter and Facebook pages, which promote physical activity as a solution to chronic disease and obesity while remaining largely silent on the role of food and nutrition, made no mention of Coca-Cola’s financial support. So far, the social media campaign has failed to gain much traction: As of Friday, the group had fewer than 1,000 followers on Twitter.

The group’s website also omitted mention of Coke’s backing until Dr. Yoni Freedhoff, an obesity expert at the University of Ottawa, wrote to the organization to inquire about its funding. Dr. Blair said this was an oversight that had been quickly corrected.

“As soon as we discovered that we didn’t have not only Coca-Cola but other funding sources on the website, we put it on there,” Dr. Blair said. “Does that make us totally corrupt in everything we do?”

Coke’s involvement in the new organization is not the only example of corporate-funded research and advocacy to come under fire lately. The American Society for Nutrition and the Academy of Nutrition and Dietetics have been criticized by public health advocates for forming partnerships with companies such as Kraft Foods, McDonald’s, PepsiCo and Hershey’s. Dietitians have also faced criticism for taking payments from Coke to present the company’s soda as a healthy snack.

Critics say Coke has long cast the obesity epidemic as primarily an exercise problem. “The message is that obesity is not about the foods or beverages you’re consuming, it’s that you’re not balancing those foods with exercise,” Dr. Freedhoff of the University of Ottawa said.

Now, public health advocates say, Coca-Cola is going a step further, recruiting reputable scientists to make the case for them.

Dr. Hill, the nonprofit’s president, is a co-founder of the National Weight Control Registry, a

long-term study of people who have lost weight, and has served on committees for the World Health Organization and the National Institutes of Health. The American Society for Nutrition refers to him as “a leader in the fight against the global obesity epidemic.”

Barry M. Popkin, a professor of global nutrition at the University of North Carolina at Chapel Hill, said Coke’s support of prominent health researchers was reminiscent of tactics used by the tobacco industry, which enlisted experts to become “merchants of doubt” about the health hazards of smoking.

Marion Nestle, the author of the book “Soda Politics” and a professor of nutrition, food studies and public health at New York University, was especially blunt: “The Global Energy Balance Network is nothing but a front group for Coca-Cola. Coca-Cola’s agenda here is very clear: Get these researchers to confuse the science and deflect attention from dietary intake.”

Funding from the food industry is not uncommon in scientific research. But studies suggest that the funds tend to bias findings. A recent analysis of beverage studies, published in the journal PLOS Medicine, found that those funded by Coca-Cola, PepsiCo, the American Beverage Association and the sugar industry were five times more likely to find no link between sugary drinks and weight gain than studies whose authors reported no financial conflicts.

On its website, the new nonprofit promises to be “the voice of science” in discussions about healthy lifestyles and contends that the concept of energy balance provides “a new science-based framework” for achieving a stable body weight.

The group says there is “strong evidence” that the key to preventing weight gain is not reducing food intake — as many public health experts recommend — “but maintaining an active lifestyle and eating more calories.” To back up this contention, the group provides links to two research papers, each of which contains this footnote: “The publication of this article was supported by The Coca-Cola Company.”

In March, Dr. Hill, Dr. Blair, and Dr. Hand announced the creation of the organization in an editorial in the British Journal of Sports Medicine. They argued that the public and many scientists largely overlooked physical inactivity as a cause of obesity. They said they were creating the Global Energy Balance Network to raise awareness “about both sides of the energy balance equation.”

The editorial contained a disclosure that the group had received an “unrestricted education gift” from Coca-Cola.

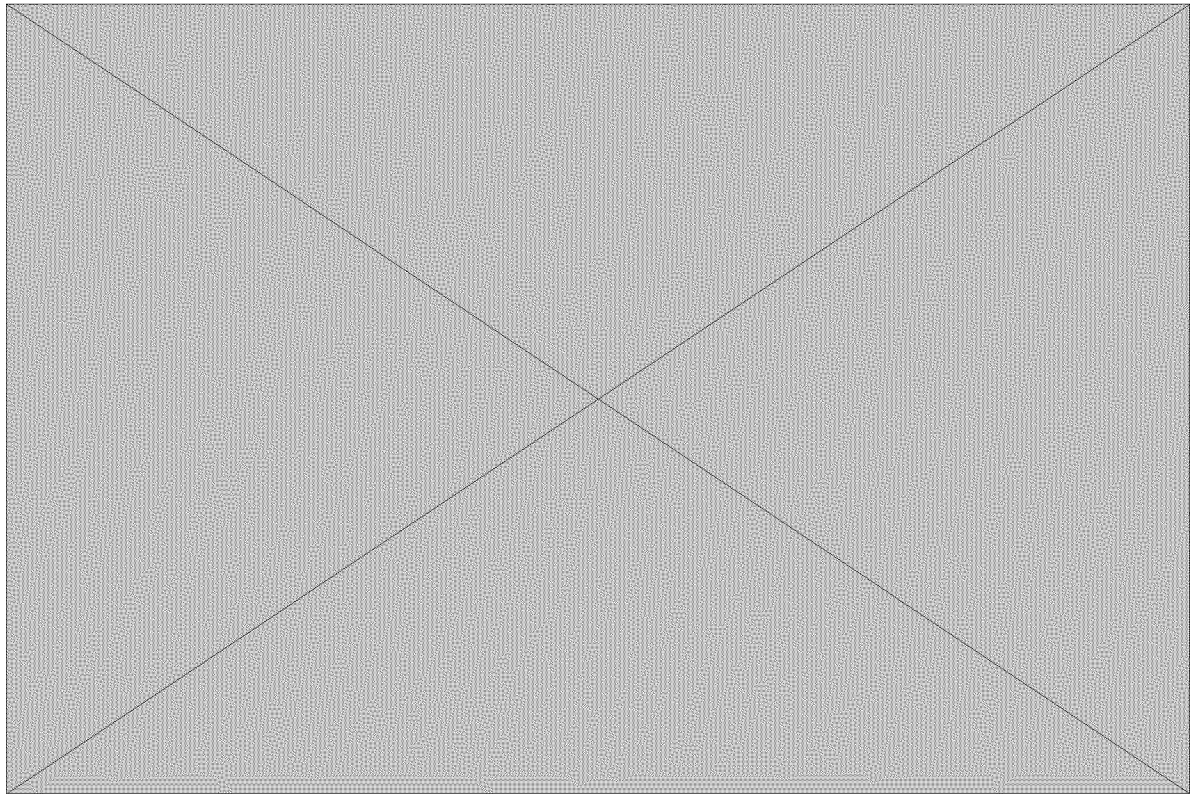
In response to a request made under the state Freedom of Information Act, the University of South Carolina disclosed that Dr. Blair had received more than \$3.5 million in funding from Coke for research projects since 2008.

The university also disclosed that Coca-Cola had provided significant funding to Dr. Hand, who left the University of South Carolina last year for West Virginia. The company gave him \$806,500 for an “energy flux” study in 2011 and \$507,000 last year to establish the Global

Energy Balance Network.

It is unclear how much of the money, if any, ended up as personal income for the professors.

“As long as everybody is disclosing their potential conflicts and they’re being managed appropriately, that’s the best that you can do,” Dr. Hand said. “It makes perfect sense that companies would want the best science that they can get.”



scientists who helped start the new nonprofit supported by Coke, from left: Steven N. Blair, a professor in the department of exercise science, epidemiology and biostatistics at the University of South Carolina; James O. Hill, a professor at the University of Colorado School of Medicine; and Gregory A. Hand, dean of the West Virginia University School of Public Health. Credit University of Colorado, West Virginia University

The group’s president, Dr. Hill, also has financial ties to Coca-Cola. The company last year gave an “unrestricted monetary gift” of \$1 million to the University of Colorado Foundation. In response to a request made under the Colorado Open Records Act, the university said that Coca-Cola had provided the money “for the purposes of funding” the Global Energy Balance Network.

Dr. Hill said he had sought money from Coke to start the nonprofit because there was no funding available from his university. The group’s website says it is also supported by a few universities and ShareWIK Media Group, a producer of videos about health. Dr. Hill said that he had also received a commitment of help from General Mills, as well as promises of support from other businesses, which had not formally confirmed their offers.

He said he believed public health authorities could more easily change the way people eat by working with the food industry instead of against it.

On its website, the group recommends combining greater exercise and food intake because, Dr. Hill said, “ ‘Eat less’ has never been a message that’s been effective. The message should be ‘Move more and eat smarter.’ ”

He emphasized that weight loss involved a combination of complex factors and that his group’s goal was not to play down the role of diet or to portray obesity as solely a problem of inadequate exercise.

“If we are out there saying it’s all about physical activity and it’s not about food, then we deserve criticism,” he said. “But I think we haven’t done that.”

But in news releases and on its website, the group has struck a different tone.

“The media tends to blame the obesity epidemic on our poor eating habits,” one recent news release states. “But are those french fries really the culprit? Dr. Steve Blair explains that you shouldn’t believe everything you see on TV.”

In the news release, Dr. Blair suggests that sedentary behavior is a bigger factor.

Most public health experts say that energy balance is an important concept, because weight gain for most people is about calories in vs. calories out. But the experts say research makes it clear that one side of the equation has a far greater effect.

While people can lose weight in several ways, many studies suggest that those who keep it off for good consume fewer calories. Growing evidence also suggests that maintaining weight loss is easier when people limit their intake of high glycemic foods such as sugary drinks and other refined carbohydrates, which sharply raise blood sugar.

Physical activity is important and certainly helps, experts say. But studies show that exercise increases appetite, causing people to consume more calories. Exercise also expends far fewer calories than most people think. A 12-ounce can of Coca-Cola, for example, contains 140 calories and roughly 10 teaspoons of sugar. “It takes three miles of walking to offset that one can of Coke,” Dr. Popkin said.

In one of the most rigorous studies of physical activity and weight loss, published in the journal Obesity, scientists recruited 200 overweight, sedentary adults and put them on an aggressive exercise program. To isolate the effects of exercise on their weight, the subjects were instructed not to make any changes in their diets.

Participants were monitored to ensure they exercised five to six hours a week, more than double the 2.5 weekly hours of exercise recommended in federal guidelines. After a year, the men had lost an average of just 3.5 pounds, the women 2.5. Almost everyone was still overweight or obese.

“Adding exercise to a diet program helps,” said Dr. Anne McTiernan, the lead author of the study and a researcher at the Fred Hutchinson Cancer Center in Seattle. “But for weight loss, you’re going to get much more impact with diet changes.”

But much like the research on sugary drinks, studies of physical activity funded by the beverage industry tend to reach conclusions that differ from the findings of studies by independent scientists.

Last week, the Pennington Biomedical Research Center in Louisiana announced the findings of a large new study on exercise in children that determined that lack of physical activity “is the biggest predictor of childhood obesity around the world.”

The news release contained a disclosure: “This research was funded by The Coca-Cola Company.”

Kelly D. Brownell, dean of the Sanford School of Public Policy at Duke, said that as a business, Coke “focused on pushing a lot of calories in, but then their philanthropy is focused on the calories out part, the exercise.”

In recent years, Coke has donated money to build fitness centers in more than 100 schools across the country. It sponsors a program called “Exercise is Medicine” to encourage doctors to prescribe physical activity to patients. And when Chicago’s City Council proposed a soda tax in 2012 to help address the city’s obesity problem, Coca-Cola donated \$3 million to establish fitness programs in more than 60 of the city’s community centers.

The initiative to tax soda ultimately failed.

“Reversing the obesity trend won’t happen overnight,” Coca-Cola said in an ad for its Chicago exercise initiative. “But for thousands of families in Chicago, it starts now, with the next push-up, a single situp or a jumping jack.”

https://www.youtube.com/watch?feature=player_embedded&v=x7FK8noIc5I

[back](#) / [top](#)

19. Secret sanctions revealed against university hosting \$1.25 billion biolab CDC Named USA TODAY -- 8/4/2015 McLean, VA

Secret sanctions revealed against university hosting \$1.25 billion biolab CDC Named Alison Young, USA TODAY August 4

Kansas State University — where a controversial \$1.25 billion biosecurity lab facility is under construction — secretly faced federal sanctions last year after repeatedly violating safety regulations during its research with bioterror pathogens, records obtained by USA TODAY show.

Kansas State's "history of non-compliance" during four consecutive inspections over two years shows a "systemic problem" and has "raised serious concerns" about the university's ability to put safeguards in place to ensure safety and containment of dangerous pathogens, according to a March 2014 letter to the university from federal lab regulators.

University officials said Tuesday they were surprised by the letter's harsh tone and language because nearly all of the violations involved administrative paperwork issues that posed no safety or security threat. Yet in the letter, regulators threatened to suspend or revoke the university's permits to do research with bioterror pathogens if it didn't agree to enter a federal performance improvement program.

The regulatory action against Kansas State is of particular importance because the university's campus in Manhattan is the site of the federal government's new National Bio and Agro-Defense Facility (NBAF), which held a groundbreaking ceremony in May. Construction of the 570,000-square-foot facility has faced years of delays and controversy because of concerns about whether research on some of the world's most dangerous agricultural diseases can be done safely in farm country and near herds of livestock.

Although the NBAF will be an independently run Department of Homeland Security facility when it opens around 2022, the university has publicized on its website that Kansas State's labs already are being used to "jump-start" research that "will eventually transition" to the new federal facility. Transition research underway includes studies of Rift Valley fever, a mosquito-borne disease that can cause abortions in livestock and fatal infections in people; Japanese encephalitis, another mosquito-borne disease that can cause reproductive problems in pigs and serious and sometimes fatal brain infections in people; and Classical swine fever, a potentially deadly pig disease.

"If I read that letter, I would think it sounds horrible, too," said Julie Johnson, biosecurity officer of the university's Biosecurity Research Institute, about the March 2014 enforcement letter. She said the university has a strong record of safety and the letter is primarily a reflection of the rigorous oversight provided by federal officials.

Lab regulators at the Federal Select Agent Program did not grant interviews or answer specific questions posed since Friday afternoon about Kansas State's regulatory history. The university has completed its performance improvement plan, and inspectors "will continue to ensure they are able to demonstrate longterm compliance before lengthening their registration period," said a general statement issued Tuesday evening by regulators from the U.S. Department of Agriculture, which jointly runs the program with the Centers for Disease Control and Prevention.

Johnson said the violations have been corrected and the university was released from the federal performance improvement program in April.

Select agent is the government's term for a list of 65 viruses, bacteria and toxins that could be used as bioweapons or that pose severe threats to health or agriculture.

Officials at the Department of Homeland Security said Tuesday that any regulatory issues at

Kansas State's labs have no impact on the work that will be done at the new federal facility. "It doesn't reflect on the NBAF. It's a totally separate entity," said James Johnson, executive director of the NBAF program. The federal lab, once built, will have its own accreditation process and federal permits for doing research.

Leaders of some cattle industry groups said the violation letter fuels their concerns about building the massive federal lab in America's farm country where a release of an animal pathogen could spread to nearby livestock herds.

"The fact that they are not currently capable of meeting necessary safety standards reinforces our concern that there will likely be an inadvertent release of one of these dangerous pathogens from that site," said Bill Bullard, CEO of R-CALF USA, a trade association for cattle producers. "This entire proposal is irresponsible and reckless, particularly given that we have a safe location where this research has been conducted since the 1950s."

The NBAF is being built to replace the federal government's aging Plum Island Animal Disease Center, which is located off the coast of New York's Long Island and is the only lab in the country allowed to work with live foot-and-mouth disease virus — which is highly contagious and considered one of the most economically devastating livestock diseases in the world.

When NBAF opens in about seven years, foot-and-mouth disease research will move from the island location to the Kansas facility. Foot-and-mouth research will occur only in the federal facility, not in the university's labs, according to information on Kansas State's website.

After a series of high-profile accidents at federal labs, an ongoing USA TODAY Media Network investigation has uncovered hundreds of incidents at public and private research facilities across the country and revealed how the secrecy that surrounds the oversight of biological and select agent research shields failures by labs and regulators from public scrutiny.

Federal regulators have refused USA TODAY's repeated requests for the names of more than 100 research facilities that have faced enforcement actions since 2003. They have cited secrecy provisions in a bioterrorism law as justification for redacting lab names from enforcement letters they released to the newspaper under the federal Freedom of Information Act. USA TODAY, through its reporting, has obtained names of sanctioned labs such as Kansas State University.

In the March 2014 letter to Kansas State, federal lab regulators wrote that "it is our determination that the failure of the KSU select agent program to comply with the select agent and toxin regulations continues to be a systemic problem unrelated to any one particular Principal Investigator, location, or project."

A chart in the letter illustrates how the university failed to comply with nine of 10 types of safety and security requirements on each of its four previous inspections since January 2012, including biosafety and containment practices, incident response and security plan requirements and training of staff.

"Why can you fail nine of 10 inspection points and still be operating?" asked Tyler Dupy,

executive director of the Kansas Cattlemen's Association. "There's a need for the research, but can we trust that the safeguards are in place to keep this stuff in place? One little mistake and it's all over."

The letter said issues at the university's labs included:

- Failing repeatedly to develop written biosafety plans commensurate with the risk of its registered select agent pathogens.

- Repeatedly failing to have safeguards sufficient to ensure biosafety and biocontainment of select agent pathogens.

- Continuously failing to provide appropriate training and ensure personnel understood the training provided and failing to document the training claimed to have been performed.

- Repeatedly failing to implement the requirements of the university's security plan to ensure select agents are protected against unauthorized access, theft, loss or release.

The records show that KSU was cited for the same types of failings in January 2012, August 2012, February 2013 and December 2013.

The issues behind the violations, to hear Kansas State officials describe them, involve administrative minutia.

For example, Johnson said inspectors took issue with the university's incident response plan saying only that a top official would be notified of an incident but not specifying how it would be done. The violation was corrected by adding words to specify that the official would be notified by phone, fax or e-mail, she said.

Violations related to failing to ensure staff understood training involved another kind of documentation issue, she said. The university kept copies of quizzes given to staff after training sessions and attached them to a dated sign-in sheet. The inspectors didn't consider the documentation adequate because each quiz wasn't individually dated, she said.

The university says these kinds of bureaucratic issues are typical of nearly all the violations that precipitated the March 2014 enforcement letter. The only issue that wasn't administrative, the university says, involves a 2012 citation for select agent research done in an unregistered area. Johnson said research on a rice plant pathogen was conducted in a space where it had been worked with long before the pathogen was added by federal officials to their list of select agents. The university said it immediately ceased the work and has since required all select agent work occur only in their Biosecurity Research Institute.

USA TODAY asked Kansas State for copies of its select agent inspection reports. University officials said they would consider the request but noted that the reports and the university's response letters are voluminous and would need to be redacted for security issues, which might take some time.

The March 2014 enforcement letter gives no indication that the violations involve minutia.

“Since 2011, KSU has expanded its select agent research program with the addition of new registered areas, select agents and work objectives, but KSU repeatedly failed to develop and implement plans to address this expanded scope of work,” said the letter, which is jointly signed by officials from the USDA and CDC.

Though regulators noted the university’s researchers were cooperative and eager to comply, they “had not been provided adequate guidance from KSU leadership to enable them to do so.”

The CDC, in a statement, referred questions about Kansas State to the USDA, which it said is the lead agency that inspects the university’s labs. The USDA did not grant interviews or provide any response to USA TODAY’s questions submitted last Friday about its oversight of the university’s labs and why it took failures on four consecutive inspections before enforcement action was taken. The USDA also didn’t respond to Kansas State’s characterization of the violations as primarily involving administrative issues.

Kansas State University was part of a coalition of Kansas state leaders that campaigned for the NBAF to be located on their campus. U.S. Sen. Pat Roberts, R-Kan., a key ally of the project, said the federal lab will create as many as 500 high-paying federal jobs and bring additional research jobs to the state. Over a 20-year-period, he said, the facility is estimated to have a \$3.5 billion impact on the Kansas economy.

As part of the Kansas bid for the federal lab, Kansas State University offered the use of its biosafety level 3 labs at its Biosecurity Research Institute until the adjacent NBAF was completed. Roberts helped secure state funding for the university’s lab in 2002, according to his news releases. The university named the lab’s building “Pat Roberts Hall.”

Roberts did not respond to interview requests about the university’s inspection history.

The NBAF has been dogged by years of controversy and questions about whether the Department of Homeland Security downplayed the risks of putting the massive research facility in the center of the country’s agricultural heartland.

The potential risks posed by the NBAF — which will for the first time in decades bring foot-and-mouth disease virus research to the U.S. mainland — have been the subject of much study and controversy.

In 2012, the Department of Homeland Security estimated the risk of a foot-and-mouth disease release is tiny — less than 0.11% over 50 years. Independent scientific experts convened by the National Research Council concluded in 2010 that the risk was as high as 70% over 50 years, and in 2012, they said the DHS was not adequately assessing the risks based on “overly optimistic” assessments of the potential for human error.

In its 2010 report, the National Research Council expert panel said the economic impact of a lab release of foot-and-mouth virus from the NBAF could be as much as \$50 billion. Because of the risks posed by human error, the experts said staff at the new facility will need “adequate ongoing training, education, and evaluation of skills. Furthermore, there will need to be zero

tolerance of deviations from biosafety standards and practices recommended by the CDC and USDA.”

Documents obtained by USA TODAY show the CDC and USDA have in the transition period allowed Kansas State’s select agent researchers to have what the letter says are serious violations on inspection after inspection, including with training and biosafety — threatening to put the university on a performance improvement plan only after problems on four consecutive inspections.

Last month, the CDC launched a comprehensive review of how it regulates safety and security at select agent labs in the wake of USA TODAY’s investigation, which revealed the agency’s inspectors allowed labs to keep experimenting with bioterror pathogens despite failing marks on inspections for years. USDA officials have not responded to USA TODAY’s questions since July 20 about whether that agency is conducting a similar self-review of its oversight performance.

Bipartisan members of Congress have expressed concerns about whether the oversight of labs is adequate. In the wake of questions asked by USA TODAY, committees in the House and Senate have told the Federal Select Agent Program they want the names of labs that have faced enforcement actions.

The CDC has provided the information requested by the Senate Committee on Homeland Security and Governmental Affairs, said Melinda Schnell, a spokesperson for committee chairman Ron Johnson, R-Wis. The committee is not publicly releasing the information at this time, she said.

“We will continue to do oversight of the program and are very concerned about the repeated failures on the part of Kansas State to safely manage its Select Agent research program,” Schnell said in an email.

Officials with the House Energy and Commerce Committee, which also has requested information about labs that have faced enforcement action, were not available for comment Tuesday.

[back](#) / [top](#)

20. The Big Reason Why America Is Turning to Renewable Energy Nation, The -- 8/10/2015 New York, NY

The Big Reason Why America Is Turning to Renewable Energy
Employment in renewables is skyrocketing, while fossil fuels have become an economic liability.

Tara Lohan / The Nation August 10

Deborah Lawrence had been watching a once-empty parking lot near Midland-Odessa, Texas,

fill up with idled drilling rigs usually at work plumbing for oil in the nearby Permian Basin. In January she noticed 10 rigs, then 17 a few weeks later. As winter turned to spring, the number climbed to 35.

That trend has continued across the country. By the end of July, the nationwide rig count had slipped 54 percent since the same time a year ago, indicating distress in the oil and gas industry. The most obvious culprit is the precipitous drop in crude prices. But the trouble goes deeper, as Lawrence knows — and she isn't just a casual observer. Lawrence is a former Wall Street financial consultant who now runs the Energy Policy Forum, helping to identify and analyze trends in the industry.

Right now, our fossil-fueled energy path has us on a roller-coaster ride and we are plunging, white knuckled. Production in the United States from the exploitation of shale oil (or tight oil), which accounts for 45 percent of the country's oil production, will take a hit if prices continue to remain well below the \$100 mark. Tens of thousands of jobs have already been cut, and some debt-laden companies may go belly up.

This is the narrative that has been seizing headlines, but it's not the whole story of what's going on in our energy economy. While shales were booming and then busting, solar and wind have been surging. Renewables have been relegated to the sidelines of our energy priorities, a small blip in our electric generating capacity each year, but that is changing. How fast it happens could be enough to rock the boat in a major way.

The fact that we should be moving to more renewable energy and using less oil is no secret. Scientists have repeatedly warned that if we continue to burn fossil fuels with our current abandon, we risk catastrophic climate impacts, some of which we are already beginning to see. Instead, they caution, much of our oil, gas, and coal reserves should stay in the ground.

But as long as fossil fuels remain cheap (ignoring externalities), and energy companies reap big profits from them, we will keep drilling and mining and burning — global catastrophe be damned.

If science and good sense aren't enough to make us shift course, perhaps economics will. We've long heard that we must choose between jobs and the environment. Or between economic growth and clean energy. But more and more, it is looking like fossil fuels are the economic deadweight and renewables are finally ready for a seat at the table.

The Plunge

The U.S. boom in the production of oil and gas in the past seven years has been largely driven by horizontal drilling and hydraulic fracturing (or fracking) of rock formations known as shale plays. But the growth may not be as long-lived as advertised.

For starters, there's good evidence to suggest that the amount of economically recoverable reserves of both shale oil and gas are not as much as previously hyped.

J. David Hughes, a geoscientist and fellow at the Post Carbon Institute, who spent 32 years with the Geological Survey of Canada, found that while short-term production of shale oil and gas is undoubtedly significant, the long-term view shows that the growth is not sustainable. His research reveals production peaking in both shale oil and gas in most of the significant plays in the United States by 2020.

The next problem facing the industry is the price tag of its operations. The costs to drill and complete a shale well can range from \$6 million to \$8 million or more a well — depending on the play and the number of drilling stages.

Production on shale wells also declines very quickly. For shale oil, the three-year average well decline rate in most major U.S. plays falls between 60 and 91 percent. Around half of all the oil that will be produced from these wells will come in the first three years. For shale gas, the three-year average well decline rate is between 74 and 82 percent.

This means that in order to maintain or increase production, you have to keep a frenetic pace of new drilling — what Lawrence Berkeley National Laboratory scientist David Fridley likened to being on an “accelerating treadmill.” The drilling frenzy that has characterized the shale boom caused a spike in production, contributing to a global glut, which has resulted in falling prices. It’s a vicious circle, and one that was hard to make economical even when crude was selling for \$100 a barrel.

When prices dropped earlier this year to around \$50 a barrel, things became more dire for the shale industry, and they haven’t greatly improved in the last six months. Despite briefly reaching around \$63 a barrel in late spring, prices have fallen again. “For the past five years we’ve been told we’re going to be energy independent and we will have all this oil and we’re going to export gas to Europe and we’re going to export gas to Asia, and it’s just not going to happen,” said Fridley.

Overproduction, combined with declining consumption, has resulted in plummeting crude prices in the past year. It’s the same script that occurred just a few years earlier, when shale gas prices bottomed out in the United States.

So what’s the industry to do?

Investor Jeremy Grantham, the founder of GMO, a Boston-based money manager, wrote in the financial publication Barron’s, “Almost no new drilling programs will be initiated at current prices except by the financially desperate and the irrationally impatient, and in three years over 80 percent of all production from current wells will be gone!”

Given the costs of drilling and completing wells, and the number needed to keep production growing, companies must have lots of cash to stay on the treadmill. And that may become harder and harder for many to do.

The Energy Policy Forum’s Lawrence has been comparing the financials of some of the industry’s top companies for years; she found that they lack free cash flow.

“They were spending a lot in capital expenditures — the money needed to drill and complete the wells,” she said. “And that was growing every year while the money they were actually making, the cash that was left over at the end of the day, was deteriorating. It was never positive.”

Lawrence crunched the numbers on more than 20 U.S. shale operators and found that the companies had been cash-flow-negative since 2009. As Alberta Oil Magazine reported, “In 2013, U.S. onshore oil producers outspent their operating cash flow by a ratio of two-to-one.”

The record-high production boom we’ve witnessed has been sustained by companies taking on high levels of debt, including \$120 billion in high-risk, high-yield bonds. JPMorgan’s estimate of the default rate for these junk bonds is nearly 4 percent this year and will be a whopping 20 percent next year, if crude prices remain around \$65 a barrel.

This may mean lights out for a number of debt-laden companies. Some will go out of business, while others may be gobbled up by larger corporations. Expect lots of consolidation and cherry-picking of assets by the big players. Giants like Chevron and Exxon Mobil will likely make out well, but they aren’t the only ones. “It will be fantastic for the investment banks, because they will make a fortune off of fees,” says Lawrence.

Those who won’t make out well, however, include more than just the debt-heavy industry players. It could be you. “A lot of pension funds invest in energy stocks, and the energy stocks have just gotten creamed,” says Lawrence. “They haven’t had good share returns. You’re going to see that reflected in your portfolio.”

Despite the bad news on shales, Lawrence sees a lot of good economic news when it comes to renewable energy.

“I have this feeling that we are on the cusp of a new energy paradigm and things are changing so rapidly,” says Lawrence. “I think you’re going to see a lot of disruption in the next five to 10 years, and I don’t think the oil and gas industry really thinks it’s coming.”

Install, Baby, Install

In March the Texas city of Georgetown announced plans to ditch gas and coal for electricity generation in favor of wind and solar. The city’s spokesperson told the press it was “primarily a price decision,” and the Texas Tribune reported that the switch allowed Georgetown to “lock in cheaper electricity” and “hedge against any future spikes in coal or natural gas prices.”

If you don’t closely track the energy markets, you may be surprised to know that generating electricity from wind and solar is cost competitive in some places in the United States already — and getting close in many others. Globally, renewables could even become the top source of electricity in just 15 years, according to a new report by the International Energy Agency.

Renewables still account for a small percentage of overall U.S. electricity generation — 13 percent for all renewables, with wind at 4.4 percent and utility-scale solar at less than 1 percent.

But some states are showing that much greater exploitation of renewables is indeed possible. Iowa got 27 percent of its total electricity from wind in 2013, and last year California became the first state to get more than 5 percent of its electricity from utility-scale solar.

In the past seven years, wind and solar capacity in the United States has tripled, and new capacity has favored renewables. In 2014 wind and solar made up 55 percent of new electric generating capacity in the United States. By comparison, natural gas was 42 percent. The other new sources — coal, nuclear, and oil — were all under 1 percent.

Currently, the federal government allows a 30 percent investment tax credit for solar, but it is set to expire at the end of 2016, at which point it will decline to 10 percent. A report from Deutsche Bank says that even without additional subsidies, solar is already cost competitive in 14 states. If the credit is renewed and costs for solar continue to fall as predicted, then we could see solar electricity as cheap as average electricity bill prices in 47 states within the next two years, according to Deutsche Bank's report. If the credit is not renewed, we could still see 36 states at grid parity.

"Gone are the days when solar panels were an exotic plaything of Earth-loving rich people," Tom Randall writes for Bloomberg Business. "Solar is becoming mainstream."

One of the things driving that growth is that costs are falling and the products are getting better. Solar and wind, points out Lawrence, are technologies and not fuels, and as such they typically become cheaper with scale and time.

Even more promising, while prices are declining in these industries, the number of people employed has skyrocketed. The Solar Foundation reports that jobs in the solar industry grew by 86 percent in the past five years. As of 2013, according to industry estimates, there were 143,000 solar jobs and more than 50,000 in wind in the United States.

For wind and solar, falling prices means more jobs. Lawrence likens it to what economists call a virtuous circle: "A recurring cycle of events, the result of each one being to increase the beneficial effect of the next."

It's the exact opposite of the shale industry's vicious circle, where high production results in plunging prices, followed by thousands of layoffs.

"The self-styled 'shale revolution' was built on the back of very expensive oil and gas prices," writes Lawrence. "Shales need very high prices to work. While high prices are great for oil and gas balance sheets, they cannot help but translate into more expensive products and services overall in the economy. It does not benefit all. It benefits only a few."

The Path Forward

While there are a lot of reasons to be optimistic about future prospects for renewables, we have a long way to go, and it's not smooth sailing by any stretch. We're talking about disrupting a system where the entrenched interests are some of the wealthiest companies in the world.

In the United States, the best way to aid continued growth for renewables, the industry says, is to lock in federal support that investors and businesses can count on. The investment tax credit for solar that Congress can renew at the end 2016 is one example. For wind it's the production tax credit (PTC), which dates back to 1992. In the past 23 years Congress has let the PTC expire a total of six times and has also elected to renew it six times. The results, as you can imagine, were a series of ups and downs for wind installation. "Industry needs confidence," said Tom Kiernan, the CEO the American Wind Energy Association. "It needs multi-year extensions for as long as possible."

There are other hurdles. Conservative groups like the American Legislative Exchange Council (ALEC) have helped launch attacks against state-level regulations such as the Renewable Energy Standards. In the last few years more than a dozen state-level bills have been introduced attacking those standards, but so far Ohio has been the only state to sign one into law. More successful at discouraging the growth of renewables have been utilities like Pella Electric Cooperative in Iowa, which will start tacking \$85 a month to the bills of homeowners who install solar or wind systems. In Arizona, fees for homeowners installing solar may rise from \$5 to \$21 a month, although the utility (Arizona Public Service) originally proposed a hike as high as \$100 a month.

At the most basic level, the country has yet to go all in on a commitment to supporting renewables, but economics may just push us there anyway. A new report from Citigroup dismissed ideas that cheap oil prices would negatively impact renewables, arguing instead said that a combination of "economic competitiveness, energy security, and environmental goals" would quickly drive the global push for more renewables.

The price volatility in the oil and gas market is not going away anytime soon. And coal, still the biggest sources of U.S. electricity generation overall, has suffered a one-two punch from natural gas and renewables. From 2010 to 2014, coal's net generation of electricity fell by 14 percent. The U.S. coal industry is now deemed in "structural decline," and there doesn't seem to be any way up.

Coal's fall and the oil industry's latest stumble with shales reveal more cracks in the fossil-fuel industry's once impenetrable wall of dominance. But the biggest threat to the industry will likely come soon, as the global community gets serious about tackling climate change. Our future energy plans will be contingent on how this plays out politically and economically.

The fossil-fuel divestment movement is gaining strength, and the idea of "stranded assets" is moving closer to economic reality. In March, the Bank of England warned insurers that policy changes addressing climate change could threaten investments in fossil fuels. And MSCI, one of the world's top stock-market index companies, reported that investors who have divested from coal, oil, and gas over the past five years are now outperforming those who haven't.

"Climate change can no longer be discounted in any future energy business model," writes author and resource expert Michael Klare. "Whether Big Oil is ready to admit it or not, alternative energy is now on the planetary agenda and there's no turning back from that."

This December, when international climate talks resume in Paris for the next installment of the United Nations Climate Change conference, we will see just how serious governments really are about commitments to reducing greenhouse gas emissions. This year, at least, the United States is willing to play. The Obama administration has already noted that Washington has a plan to reduce emissions up to 28 percent below 2005 levels in the next 10 years.

From a scientific standpoint, the results from Paris may be too little, too late, even if big polluters like the United States can make good on new commitments. And political will is only one part of the puzzle. Numerous voices have called for a rethinking of our cultural and economic norms that drive perpetual growth.

“Because of our endless procrastination, we also have to pull off this massive transformation without delay,” writes author Naomi Klein in her newest book, *This Changes Everything*. “Is it possible? Absolutely. Is it possible without challenging the fundamental logic of deregulated capitalism? Not a chance.”

Fridley, the scientist from Lawrence Berkeley National Laboratory, has also called for a deeper conversation on what a path to renewables would look like. Most of the focus has been on how to use renewables to fill our electricity needs, but this is just the tip of the iceberg when it comes to all the energy we use in our highly industrialized lives.

Globally, electricity accounts for only about 20 percent of our final energy consumption, says Fridley, and even if we hit 50 percent renewables for electricity, we still have only addressed about 10 percent of how much energy the world consumes.

“Yes, we can have a renewable world, but it’s not really going to look like the world we have today,” says Fridley. “It could be a better world to live in, it could be a much worse world to live in, depending on many of the decisions we make in the next decade or two.”

[back](#) / [top](#)

21. The True Value of BP’s \$18.7 Billion Settlement **AlterNet -- 8/7/2015 San Francisco, CA**

The True Value of BP’s \$18.7 Billion Settlement

What does the record settlement really mean to one of the world's wealthiest companies — and the Gulf Coast it is meant to restore?

Michael Conathan / Center for American Progress August 7

On July 2, the U.S. Department of Justice and BP — one of the world’s largest oil and gas companies — announced that they had come to terms on a historic \$18.7 billion settlement over damages from the 2010 Deepwater Horizon oil disaster. By any metric, this is an enormous sum

of cash; for example, it is more than the gross domestic product of 83 countries, according to the World Bank. U.S. Attorney General Loretta Lynch announced in a statement that, if ultimately approved, this restitution “would be the largest settlement with a single entity in American history”—appropriate considering that the spill was one of the worst environmental disasters to ever occur in the United States.

But what does this amount — \$18.7 billion — mean to one of the wealthiest, most profitable corporations on the planet? A couple of clues came soon after the settlement was announced: That afternoon, BP’s stock price jumped 4.2 percent. The Financial Times, meanwhile, quoted an unnamed BP source who detailed the wave of relief that swept over his colleagues as they learned of the agreement: “I could see it in the eyes of the executive team. [The settlement] liberates us.”

Yet, is almost \$19 billion enough to liberate the Gulf of Mexico’s economy and environment after BP’s “gross negligence” led to the dumping of more than 3 million barrels of oil into its waters and onto its shores? Where will the money go? And, at the end of the day, is it a good deal for Gulf Coast residents and American taxpayers? The answer is not simple. However, this brief provides a breakdown of the key points of the settlement: the good, the bad and the convoluted.

The Good News for BP

Long payout schedule means cost savings

When does \$18.7 billion actually equal \$9.16 billion? When it’s paid over 15 to 17 years. While the exact present day value of the total payout is subject to some interpretation, it will certainly equal less than \$18.7 billion in 2015 dollars by the time all the checks are written. As any economics student will tell you, money loses value over time. One way economists measure this depreciation is by using what’s known as a discount rate, which allows them to calculate the value of future income and expenses in terms of present day dollars.

The economic policy team at the Center for American Progress examined the settlement’s payout structure and applied a variety of discount rates. When using a very conservative discount rate of 3.1 percent — the same rate used by the White House Office of Management and Budget for public sector projects — offset by accrued interest, the net present value of BP’s financial restitution will equate to approximately \$15.43 billion. Meanwhile, in BP’s own annual report, it uses a discount rate of as much as 12 percent — indicative of the rate of return the company estimates it can earn on money invested in its business today. Applying this rate to the settlement’s payment plan puts the cumulative toll on BP at just \$9.16 billion. That discounted total is still a lot of money for economic and environmental restoration in the Gulf, but an amount BP could cover while still remaining in the black considering the \$12 billion in profits the company pocketed in 2014 alone.

BP will pay interest at well below market rates

Even a company as profitable as BP would not be able to simply write a check to cover a 10-

figure settlement; the company was always going to have to figure out a payment plan. As previously mentioned, this deal includes a payout structure that will last 15 to 17 years. As a result, BP will have to finance what amounts to a 15 to 17 year mortgage.

Because the damage had already been done in this case, the U.S. government would have been within its rights to demand payment upfront, forcing BP to borrow money from markets by taking a loan from a bank or issuing stocks or bonds. Instead, the parties agreed to an extended payment plan at an annual interest rate of slightly less than 1 percent over the life of the settlement. By comparison, in BP's most recent long-term bond sale, markets demanded an interest rate of just more than 3.5 percent for \$1 billion in bonds that come due in 10 years. An \$18.7 billion settlement, which would require a much larger loan with a longer payback time, would almost certainly have demanded a higher interest rate. Thus, as structured, the settlement results in massive savings for BP relative to the cost of being forced to pay the settlement upfront. Conservatively, these savings are equivalent to the difference between the less than 1 percent interest BP is paying out and the 3.5 percent or more that the market would have demanded. CAP's economists have calculated that in sum, this amounts to a savings of more than \$2 billion. That may be one reason the overall settlement number is so large: BP may have been willing to settle for a slightly larger amount since the terms of the deal included a lower interest rate.

Tax write-offs could save BP — and cost taxpayers — \$4.6 billion

Furthermore, BP may be able to ease the financial burden of the settlement by simply deducting a huge portion of it on their corporate tax returns. According to the U.S. Public Interest Research Group, or U.S. PRIG, it is possible that when the ink dries on a final settlement, all of it except the \$5.5 billion in Clean Water Act penalties could become a tax write-off, unless the terms of the final settlement expressly forbid it. Absent such a prohibition, U.S. PIRG estimates that the deduction will save BP — and cost the U.S. Treasury — roughly \$4.6 billion in tax revenue.

The good news for the Gulf of Mexico

A quick end to Gulf Coast residents' waiting game

Arguably the biggest benefit of this settlement is not the total amount of money BP will have to pay, but the fact that the company will start paying as soon as the settlement is finalized, avoiding what could have become a lengthy waiting game. Until the Macondo well blew out in 2010, the highest profile U.S. oil spill had been the 1989 Exxon Valdez spill in Alaska's Prince William Sound. While that 11-million gallon disaster spawned numerous strict regulatory changes and led to the passage of the Oil Pollution Act of 1990, the judicial proceedings over Exxon's financial restitution dragged on for more than two decades. In 2008, the U.S. Supreme Court remanded a \$2.5 billion punitive damages award back to a lower court for reconsideration, resulting in a final payment of just more than half a billion dollars.

In the intervening two decades, at least 6,000 of the 32,000 original plaintiffs in the case died prior to its resolution, including native Alaskans who had relied on the sound for their livelihoods and to sustain their culture for centuries. Gulf Coast residents will avoid potentially

decades of waiting before their claims can be resolved and appear to be guaranteed a significant proportion of the amount needed to restore the region's coast and ocean.

BP agrees to pay for as yet unknown damages

For all the clear ramifications of this massive spill, we may not yet understand all the negative effects of such a large and far-reaching disaster. To address additional damages that may come to light long after the settlement is signed, the deal includes a groundbreaking clause that sets aside \$232 million, plus interest accrued, for future natural resource damages payments. This money will go into a fund dedicated to addressing harmful results from the spill that may not be known until years down the road.

For example, in the case of Exxon Valdez, the herring fishery in Prince William Sound collapsed in 1993, two years after the initial settlement was reached. Only later did scientists discover that crude oil exposure makes herring highly vulnerable to disease and causes major embryonic deformities. Even today, the Exxon Valdez Oil Spill Trustee Council lists this herring fishery as “not recovered.”

The Exxon settlement did include a so-called reopener window, which allowed the government to file additional claims of as much as \$100 million for 15 years after the spill. Yet it set a very high bar for meeting the burden of proof and required additional litigation to access any of this money. By contrast, the BP settlement includes its future damages fund as an upfront commitment with no additional litigation required.

The convoluted: Where will all this money go?

There are basically three pots of money that comprise the \$18.7 billion settlement: \$7.3 billion is for natural resource damages, including the future damages fund; as much as \$5.9 billion will go to states and Gulf Coast localities to settle claims for economic damages, primarily lost tax revenue; and the remaining \$5.5 billion will be used to pay penalties under the Clean Water Act. The first two pots of money are for relatively straightforward purposes. Natural resource damages are funds that states and federal entities will use to restore natural resources to as close to their pre-spill state as possible, including \$1.24 billion that is specifically targeted for deep ocean restoration. The economic damages money, meanwhile, will be paid to state, county or parish, and local entities to compensate them for economic losses during the spill — primarily lost tax revenue. States will receive \$4.9 billion; “up to” \$1 billion will go to municipal government entities.

The Clean Water Act penalties, as alluded to in the table above, are a unique case. In 2012, Congress enacted the Resources and Ecosystem Sustainability, Tourism Opportunities, and Revived Economies of the Gulf Coast States Act — a mouthful of a title designed to be truncated as the RESTORE Act. The law, which was a key recommendation of the Center for American Progress' 2011 “Beyond Recovery” report, requires 80 percent of BP's punitive Clean Water Act penalties to be returned to the Gulf Coast states for ecosystem and economic restitution. Under the current settlement, those penalties will total \$5.5 billion, meaning the Gulf Coast region's 80

percent share will equal \$4.4 billion.

The RESTORE Act money will provide states and localities with a one-time opportunity to address some of the lingering environmental effects of decades of oil and gas development and set an economically depressed region on a path to a more vibrant, sustainable future. The question of how much will be spent on ecosystem-related initiatives, however, remains unsettled. Eligible uses for the states' money include environmental restoration and resiliency, but also initiatives to promote tourism and fisheries and to either build or rebuild coastal infrastructure.

Restoration of the Gulf's rapidly degrading wetlands should be a priority for RESTORE Act funding. For decades, the oil and gas industry has contributed to the landscape-scale loss of marshes and wetlands throughout the region. This industrial activity, combined with sea level rise due to climate change, results in 75 square kilometers of Louisiana wetlands eroding into the Gulf of Mexico annually. Lost along with this acreage are the social and economic benefits they provide to society, including buffering storm surge, filtering pollution, and serving as nursery habitats for fisheries.

One might assume that environmental restoration projects would be a tough sell in the Republican-dominated Gulf Coast states. However, a new poll of Gulf Coast residents commissioned by the Theodore Roosevelt Conservation Partnership and The Nature Conservancy found that 68 percent of respondents prefer that RESTORE Act money be used "mainly for restoration of our beaches, wildlife habitat, coastal areas, rivers and other waters that affect the Gulf Coast," while just 17 percent prefer funds be "mainly" used for infrastructure projects. That figure is actually higher among Republicans, at 71 percent, and independents, at 75 percent, than among Democrats, at 60 percent. Furthermore, the conservative think tank R Street supported this bipartisan approach in a 2013 report, calling wetlands restoration "an excellent example of a public good that the RESTORE Act can and should fund."

Conclusion

Even if all goes smoothly, the settlement will not be finalized until sometime in 2016 — possibly around the time the Mark Wahlberg action-drama "Deepwater Horizon" is set to be released on September 30. At least now the federal, state and local entities that will be faced with managing this massive payout know how big their pieces of BP's pie are likely to be. It will then be up to them to ensure that all Gulf Coast stakeholders make the most of this opportunity to do what then BP CEO Tony Hayward promised to do in the immediate aftermath of the spill: "Make this right."

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[back / top](#)

22. Watch the wind swirl across Earth with this awesome map
Grist Magazine -- 8/7/2015 Seattle, WA

Watch the wind swirl across Earth with this awesome map
John Metcalfe 7 Aug 2015

Though software engineer Cameron Beccario did it first with “Earth,” now NOAA has launched its own real-time wind model displayed over the gorgeous backdrop of the world at night.

Or day — you can change the time to see current and future conditions, and even watch the sun line swoop across the globe. (The model is refreshed with new forecasts every six hours.) This is North America with the day-night terminator halfway across the continent:
<http://www.nnvl.noaa.gov/weatherview/index.html>

Winds are displayed as blue lines bunching in tight swirls in low-pressure areas. Shown above is Typhoon Soudelor menacing Taiwan on Thursday, and here are gusty ocean breezes flowing down the California coast:
<http://www.nnvl.noaa.gov/weatherview/index.html>

[back](#) / [top](#)

23. Japan split over restart of first nuclear reactor since Fukushima disaster Guardian -- 8/9/2015 London, UK

Japan split over restart of first nuclear reactor since Fukushima disaster
Rising costs from gas and oil are cited by supporters of a programme to bring reactors back on line, but ageing plant and risks raise widespread concern
Justin McCurry 9 August

An otherwise unremarkable town in south-west Japan will be propelled this week to the forefront of the country’s biggest experiment with nuclear power since the Fukushima disaster in March 2011.

After months of debate about safety, Japan will begin producing nuclear energy for the first time in almost two years close to the town of Satsumasendai as early as Tuesday.

Restarting one of the Sendai nuclear plant’s two 30-year-old reactors represents a victory for the prime minister, Shinzo Abe, who insists that without nuclear energy the Japanese economy will buckle beneath the weight of expensive oil and gas imports.

But his call for Japan to confront its Fukushima demons has been greeted with scepticism by most voters, whose opposition to nuclear restarts remains firm, even in the face of rising electricity bills.

Just over four years since Fukushima Daiichi had a triple meltdown, triggering the world’s worst nuclear crisis for 25 years, Japan remains deeply divided over its future energy mix.

The 2011 disaster forced the evacuation of 160,000 people and the closure of all the country's 48 working reactors for safety checks.

Opinions among the 100,000 residents of Satsumasendai range from anxiety to relief. Yoshiharu Ogawa, has campaigning to block Japan's return to nuclear power.

Local campaigners say the plant operators – Kyushu Electric – and local authorities have yet to explain how they would quickly evacuate tens of thousands of residents in the event of a Fukushima-style meltdown.

“There are schools and hospitals near the plant, but no one has told us how children and the elderly would be evacuated,” said Yoshitaka Mukohara, a representative of a group opposing the Sendai restart.

“Naturally there will be gridlock caused by the sheer number of vehicles, landslides, and damaged roads and bridges.”

A survey by the Asahi Shimbun newspaper found that only two of 85 medical institutes and 15 of 159 nursing and other care facilities within a 30 km radius of the Sendai plant had proper evacuation plans.

About 220,000 people live within a 30km radius – the size of the Fukushima no-go zone – of the Sendai plant; a 50km radius would draw in Kagoshima city and raise the number of affected people to 900,000. “I can't begin to imagine how chaotic that would be,” Mukohara said.

Massive earthquakes of the kind that sparked the Fukushima meltdown are not the only potential hazard. The Sendai facility is surrounded by a group of five calderas, and Sakurajima, one of Japan's most active volcanoes, is just 50km away, leaving the plant exposed to volcanic ash fallout, and, in the most extreme scenario, lava flows.

There are doubts, too, about the reliability of an ageing reactor that has not been used since it was shut down for safety checks in 2011. “You wouldn't have much faith in a car that's been on the road for more than 30 years,” said Mukohara. “So why are we so willing to trust a nuclear reactor?”

Shaun Burnie, a nuclear specialist at Greenpeace Germany, accused Japan's government and nuclear industry of cutting corners in its desperation to put reactors back online.

“They are disregarding fundamental principles of nuclear safety and public health protection,” Burnie said. “The same players in the ‘nuclear village’ that delivered Japan the Fukushima Daiichi tragedy in 2011 are attempting to kick-start nuclear power again.”

Sendai reactor No 1 is one of 25 reactors being targeted for possible restarts. “We've finally come this far to restart the first reactor,” the trade and industry minister, Yoichi Miyazawa, told reporters recently. The plant's second reactor is expected to go back into operation in October.

Last autumn, the Sendai reactors became the first to clear safety hurdles imposed by a revamped nuclear regulation authority. The restart was approved by 19 of the 26 assembly members in Satsumasendai, located 1,000km south-west of Tokyo, and by the pro-nuclear governor of Kagoshima prefecture, Yuichiro Ito.

With national polls showing that most Japanese oppose nuclear restarts, the town's council is reluctant to gauge local opinion, said Ryoko Torihara, a Satsumasendai resident who is campaigning to keep the reactors idle.

"They won't conduct a poll of local people because they're scared of the result," she said. "They're aware that Japan has fared perfectly well without nuclear power for almost two years."

A nationwide Kyodo News poll last October found that 60% of respondents opposed an immediate return to nuclear energy, while 31% were in favour. But supporters of the restarts say the long hiatus in nuclear energy production has taken its toll on Satsumasendai's population.

When in operation, the plant contributes up to 3bn yen (£16m) a year to the local economy, according to the local chamber of industry and commerce, much of it via 3,000 workers who descend on the town twice a year to conduct lengthy safety checks.

Satsumasendai continues to receive more than 1bn yen in annual government subsidies for hosting the reactors, but some residents complain keeping the plant shuttered for so long has sucked the life out of local commerce, with hotels, restaurants and other service industries reporting a dramatic drop in trade.

"This is my hometown and I don't like to see its economy in trouble," said Tetsuro Setoguchi, a 27-year-old builder. "We receive lots of subsidies for hosting the nuclear plant, and if they dry up it will be difficult for the town to function."

"Lots of jobs depend on the plant, especially in the construction industry. I'm sure that every single builder here wants the reactors to be restarted."

Kyushu Electric, which last August received a 100bn yen bailout from a state-owned bank to survive, estimates that putting one reactor back online would help it reduce costs from burning fossil fuels by about 7.4bn yen a month. The utility is reeling from four straight years of losses, and nuclear operators across Japan say they have incurred tens of billions of dollars in losses as a result of Fukushima-enforced plant closures.

Before Fukushima, nuclear provided 30% of Japan's energy needs, and there were plans to increase its share to around 50%. Post-Fukushima, the Abe administration has set nuclear an ambitious target of a 20-22% share of the total energy mix by 2030.

As it prepares to lead Japan into a new, uncertain age of nuclear power generation, the Sendai plant is a fortress protected by high perimeter fences and patrolled by security guards.

At a tent village set up on a windswept beach just along the coast, anti-nuclear activists refuse to accept that Japan's imminent nuclear reboot is inevitable.

"We will do all we can to stop it," said Yoshiharu Ogawa, who has travelled from his home near Tokyo. "The local authorities may have approved the restart, but they are completely out of touch with public opinion."

[back](#) / [top](#)

24. What you need to know about toxic algae blooms

USA TODAY -- 8/7/2015 McLean, VA

What you need to know about toxic algae blooms

Mary Bowerman, USA TODAY

A massive toxic algal bloom thriving in the warm water along the West Coast may be the largest ever recorded, according to National Oceanic and Atmospheric Administration scientists.

The bloom stretches 40 miles wide and in some places is 650 feet deep. It runs from California to Alaska, and has shuttered lucrative fisheries in several coastal states.

"It's unprecedented," Vera Trainer, a research oceanographer with the NOAA's Northwest Fisheries Science Center told USA TODAY Network.

The bloom has a slightly brown tinge, unlike the bluish green blooms in the Great Lakes. According to NOAA, marine algae blooms are common in the spring, but the massive bloom off the West Coast contains high concentrations of the toxin, domoic acid. The toxins can accumulate in small fish and shellfish, which can make consumption harmful for people and marine life.

Across the country, from the Chesapeake Bay to the Great Lakes, blooms are popping up and wreaking havoc on wildlife and local economies.

But the causes of the harmful algae blooms vary depending on the location of the body of water. Trainer and Don Scavia, the director of University of Michigan Graham Sustainability Institute, spoke to USA TODAY Network about what massive algae blooms are, and why scientists think they will only become more prominent.

Q:What are algae?

A: Algae are essentially microscopic floating plants in lakes, rivers and oceans.

"Typically algae are good, harmless and beneficial," Scavia said. "It's essential to have algae in the lakes and the ocean."

The problem occurs when algae are overproducing or producing toxins, he said.

Vera said that algae photosynthesize like plants and grow faster when temperatures are warmer, especially in summer months.

"They are still present in colder months, though they don't bloom during those months," she said.

Q: What causes massive algae blooms?

A: There are a few different kinds of harmful algae blooms, according to Scavia. He said some blooms are not toxic but create, "giant scums at the surface of bodies of water." Other algae blooms release toxins that can be harmful to humans and animals.

Dead zones, or areas that are inhospitable to ocean life, are caused by massive algae blooms that sink to the bottom of bodies of water where they decompose, reducing the oxygen levels in the water.

The thriving blooms are caused by an excess of nutrients like nitrogen and phosphorus, typically from agricultural runoff.

He says in the Chesapeake Bay, the cause is agricultural runoff, typically from chicken farms; in the Great Lakes and Gulf of Mexico it's large-scale industrial runoff from corn and soybeans.

Scavia notes the vast algae bloom off the West Coast is not caused by nutrient runoff, but from a "high concentration nutrients from deep in the ocean, driven by changes in ocean currents and climate."

Trainer is part of a NOAA-led team surveying the harmful algae bloom in the Pacific Ocean. She says researchers aren't sure of the exact cause of the massive toxic algae bloom off the West Coast but notes that it's "tempting to correlate this with the warm water" and climate change.

Satellite image of algal blooms around the Great Lakes, visible as swirls of green in this image of Lake St. Clair and in western Lake Erie. (Photo: NASA / Goddard's MODIS Rapid Response Team / HANDOUT, EPA)

Q: How do toxic algae blooms impact people?

A: The economic impacts of algae blooms can be devastating for local economies, according to Trainer.

She notes that the toxic algae bloom flourishing off the West Coast, forced several fisheries in Washington and Oregon to close their doors because of elevated levels of toxins in shellfish. She says indigenous people along the Washington coast that rely on smaller fish or shellfish are looking for other meal options.

"It's like the corner grocery store, the small fishers really suffer," Trainer says.

Scavia points to toxic algae blooms in western Lake Erie last year that resulted in a shutdown of the water supply of 400,000 people.

Areas with high concentrations of toxic algae can be a risk to swimmers and include high costs for local governments to treat their drinking water. He said the toxic blooms can make people sick, and they aren't just a problem for humans.

"It can also be very detrimental to dogs or cattle that are drinking the water, [ingesting the algae] has killed both in the past," he said.

Q: Will these algae blooms keep happening?

A: In the past few years, reports have shown the number of toxic blooms and dead zones around the world have been increasing dramatically, according to Scavia.

Scavia says recent toxic algae forecasts predict a bloom larger than the one that shut down the water supply for people in Toledo, Ohio, last year.

Trainer notes that while massive algae blooms typically disperse after a few weeks, the bloom in the Pacific has been around since May.

"There are suggestions that this warmer water is giving us an indication of the scenarios that could happen under climate change," she said. "If this is an indication of things to come, it's not good news."

[back](#) / [top](#)
